DOCUMENT RESUME

ED 025 663 08 VT 007 625

Meeting of the National Advisory Committee for the Allied Health Professions Projects (1st. University of California, Los Angeles, September 13, 1968).

Allied Health Professions Projects, Los Angeles, Calif.; California Univ., Los Angeles. Div. of Vocational Education.

Spons Agency-Office of Education (DHEW), Washington, D.C.

Pub Date Nov 68

Grant-OEG-0-8-080627-4672

Note-110p.

EDRS Price MF-$0.50 HC-$5.60

Descriptors-*Advisory Committees, Autoinstructional Methods, *Community Colleges, Conference Reports, Curriculum Development, *Guidelines, *Health Occupations Education, Professional Associations, *Program Development, Speeches, Systems Approach, Teacher Education

Identifiers-*Allied Health Professions Projects

Twenty-eight committee members, representing educational institutions, professional associations, public agencies, and the public-at-large, participated in a meeting to provide guidance in a 4-year project undertaken by UCLA to develop exemplary instructional programs for the continuing education of existing allied health personnel and for the preservice education of new allied health personnel at the junior college level. Presentations include: (1) an explanation of the background of the project, (2) review of the proposal by Melvin Barlow, (3) review of the junior college level allied health professions and discussion of priorities by Mary Jensen, (4) discussion of the systems approach to instruction and individualization of instruction by B. Lamar Johnson, (5) a discussion of UCLA hospital-based training programs by Bernard Strohm, (6) an explanation of the UCLA clinical instructor training programs by Miles H. Anderson, and (7) demonstration of polysensory multi-media instructional materials by Milo P. Johnson. Appendixes include an instrument used to determine priorities among health occupations programs and a review of the results of the survey completed at the advisory committee meeting, a survey of health occupations programs, and the staffing pattern for the project. (JK)

F1

C1

# NATIONAL ADVISORY COMMITTEE
for the
ALLIED HEALTH PROFESSIONS PROJECTS

MEETING REPORT,
SEPTEMBER, 1968

INTERIM REPORT
PROJECT NO. 8-0627

ED025663

VT007 625

3
UNIV~~ERSITY~~ OF CALIFORNIA, LOS ANGELES.
, Div~~ision of~~ Vocational Education,
4 ALLIED HEALTH PROFESSIONS PROJECTS, Los Angeles, Calif.

November, 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

#8-0627

DEC 26 1968

ED025663

Narrative Report

~~First~~ Meeting of the

NATIONAL ADVISORY COMMITTEE
for the
ALLIED HEALTH PROFESSIONS PROJECTS (1st)

University of California, Los Angeles
~~Friday,~~ September 13, 1968.)

UNIVERSITY OF CALIFORNIA, LOS ANGELES
Division of Vocational Education

ALLIED HEALTH PROFESSIONS PROJECTS
825 South Barrington Avenue
Los Angeles, California, 90049

November, 1968

FOREWORD

A four-year program for curriculum development and creation of innovative approaches to instruction in the health-related occupations was initiated in August, 1968, by the Division of Vocational Education, University of California, Los Angeles. This was funded by a grant from the United States Office of Education.

To provide needed guidance in the development of a program eventually to produce basic instructional materials for at least eighteen of the allied health occupations, at levels ranging from brief in-service training through intermediate levels and to the junior college AA degree, a National Advisory Committee was constituted, representing all major elements throughout the Nation that are concerned with providing more and better health services. Its first meeting, under the chairmanship of Mr. Phillip L. Williams, a local business executive with a keen interest in the objectives of the program, was held in Los Angeles in September of this year.

This document, with only minor changes for purposes of brevity or clarity, has been derived from the tape recording made at the all-day session. It has been prepared under the direction of Dr. Katherine L. Goldsmith, Deputy Director, by the Editor for the project, Mrs. Mary Ellison.

The report emphasizes the guidelines and directives for the proposed program expressed by the spokesmen for professional organizations, the educational community, Governmental units, and the lay public, who comprise the membership of the National Advisory Committee. It is being distributed to all participating agencies and individuals and will be made available to other groups or programs that have expressed interest in what methods and avenues are under consideration for implementation of the UCLA Allied Health Professions Projects.

Miles H. Anderson
Director

November, 1968

CONTENTS

Page

Foreword . . . iii

Agenda . . . 1

National Advisory Committee Roster . . . 3

MEETING OF THE NATIONAL ADVISORY COMMITTEE . . . 7

  Keynote Address, Dr. Sidney High, Jr. . . . 8

  Presentation of Dr. Melvin L. Barlow. . . . 16

  Statements of interest . . . 17

    Richard S. Nelson . . . 17
    C. L. Roberts. . . . 17
    Levitte Mendel . . . 18
    Dr. R. L. Matkin . . . 19
    Clyde L. Lindley . . . 20
    Dr. Dale R. Lindsay. . . . 21
    Dr. J. Warren Perry. . . . 22
    John K. Lopez. . . . 24
    Dr. B. Lamar Johnson . . . 25
    Miss Georgeen DeChow . . . 26
    Dr. Paul E. Klopsteg . . . 27
    Dr. Joseph A. Gallagher. . . . 28
    Brig. Gen. James A. Wier . . . 30
    Dr. John Lombardi. . . . 33
    Dr. Henry B. Peters. . . . 36
    Joseph Traub . . . 37
    Anthony Staros . . . 38
    Miss Ann Lewis . . . 39
    R. W. Gerard, M.D. . . . 40
    William P. Steinberg . . . 42
    Thomas O'Farrell . . . 42
    Ralph C. Kuhli . . . 44

  Review of Junior-College Level Allied Health Professions and Discussion of Priorities--Miss Mary Jensen . . . 47

  Presentation of Dr. B. Lamar Johnson. . . . 54

  Presentation of Mr. Bernard Strohm . . . 60

  Clinical Instructor Training Programs - Dr. Miles H. Anderson. . . . 64

CONTENTS (Continued **Page**

Demonstration of Polysensory Multi-Media Instructional Materials - Dr. Milo P. Johnson 68

Chairman's Closing Statement and Adjournment . 79

APPENDICES 81

AGENDA

National Advisory Committee
Allied Health Professions Projects
Division of Vocational Education
University of California, Los Angeles

September 13, 1968

Mr. Phillip L. Williams, Chairman, Presiding

9:00 A.M.	Welcome
	Dr. Paul O. Proehl, Vice-Chancellor University Relations & Public Programs
	Introductions
	Mr. Phillip L. Williams
9:30 - 11:45 A.M.	Explanation of the background of the project, from the United States Office of Education's point of view.
	Dr. Sidney High, Jr.
	Review of the proposal: organization, staffing, procedures.
	Dr. Melvin L. Barlow
	Preliminary statement by each committee member concerning interest and participation of organizations in the project.
	National Advisory Committee members
	Review of junior college level Allied Health Professions, that are proposed to be undertaken by the project staff.
	Miss Mary Jensen
11:45 - 1:30 P.M.	Luncheon - Fox & Hounds

AGENDA CON'T

1:45 - 4:00 P.M. Curriculum guidelines as related to junior college policies and requirements for Associate Degree Curricula in the Allied Health Professions.

Dr. B. Lamar Johnson

Certificate and on-the-job training programs in the Allied Health Professions.

Mr. Bernard Strohm

Clinical Instructor Training programs for the Allied Health Professions.

Dr. Miles H. Anderson

Demonstration of polysensory, multi-media instructional units.

Dr. Milo P. Johnson

Summary statement by each committee member

National Advisory Committee members

Adjournment

NATIONAL ADVISORY COMMITTEE

ALLIED HEALTH PROFESSIONS PROJECTS
DIVISION OF VOCATION EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES

EDUCATIONAL INSTITUTIONS

*R. W. Gerard, M.D.	Dean, Graduate Division, University of California, Irvine
*Dr. Milo Johnson	Superintendent and President, Mt. San Jacinto College
*Dr. Dale R. Lindsay	Assistant Chancellor, Research and Health Sciences, University of California, Davis
*Dr. John Lombardi	Assistant Superintendent, Los Angeles Junior College Districts
Mr. Charles W. Patrick	President, San Diego Junior Colleges
Alternate: *William B. Steinberg	Director, Vocational Education
*Dr. Henry B. Peters	Assistant Dean, School of Optometry, University of California, Berkeley

PROFESSIONAL ASSOCIATIONS

*Miss Georgeen H. DeChow	Member, Commission on Nursing Education, American Nurses' Association; Director, Department of Nursing, Manatee Junior College, Bradenton, Florida
Mr. L. M. Detmer	Director, Bureau of Paramedical Education, American Hospital Association
Alternate: *Mr. Thomas O'Farrell	Associate Director, Hospital Continuing Education Project, Hospital Research and Education Trust, American Hospital Assoc.
* Dr. B. Lamar Johnson	Professor of Education, UCLA Representing American Association of Junior Colleges

---

*Present at meeting

NATIONAL ADVISORY COMMITTEE CON'T

PROFESSIONAL ASSOCIATIONS CON'T

*Dr. Paul E. Klopsteg	Member, National Academy of Sciences-National Research Council
*Mr. Ralph C. Kuhli	Director, Department of Allied Medical Professions and Services, Division of Medical Education, American Medical Association
*Mr. Levitte Mendel	Associate Director, National Health Council
*Dr. J. Warren Perry	President, Association of Schools of Allied Health Professions; Dean, School of Health Related Professions, State University of New York, Buffalo
*Mr. C. L. Roberts	Executive Director, Association of Rehabilitation Centers
*Mr. Anthony Staros	Chairman of North American Sub-Committee, International Committee on Prosthetics (International Society for Rehabilitation of the Disabled)
Mr. Reginald H. Sullens	Secretary, Council on Dental Education, American Dental Association
Alternate: *Dr. R. L. Matkin	Assistant Secretary, Council on Dental Education, American Dental Association

PUBLIC AGENCIES

H. M. Engle, M.D.	Chief Medical Director, Department of Medicine and Surgery Veterans Administration, Washington, D. C.

---

*Present at meeting

NATIONAL ADVISORY COMMITTEE CON'T

PUBLIC AGENCIES CON'T

*Dr. Joseph A. Gallagher	Deputy Director, Bureau of Health Manpower, National Institutes of Health
Dr. James A. Garrett	Assistant Administrator, Research Demonstration and Training Social and Rehabilitation Services, US Department of Health, Education & Welfare
Alternate: *Mr. Joseph Traub	Consultant, Prosthetics-Orthotics, Social and Rehabilitation Services US Department of Health, Education & Welfare
*Dr. Sidney High, Jr.	Instructional Materials and Practices Branch, Division of Comprehensive and Vocational Education Research, Bureau of Research, Office of Education, US Department of Health, Education & Welfare
*Mr. Clyde J. Lindley	Executive Secretary, Advisory Council on Education, Veterans Administration
Richard Magraw, M.D.	Deputy Assistant Secretary, Health Manpower, Department of Health, Education & Welfare
Louis M. Rousselot, M.D.	Deputy Assistant Secretary, Health and Medical, Manpower and Reserve Affairs, Assistant Secretary of Defense
Alternate: *Brigadier General James A. Wier, MC USA	Staff Director, Health and Medical Assistant Secretary of Defense

PUBLIC-AT-LARGE

*Mr. Bernard F. Kamins	Consultant, Public Relations, Beverly Hills
*Mr. Phillip L. Williams	Vice President, Beneficial Standard Life Insurance Company, Los Angeles

---

* Present at meeting

NATIONAL ADVISORY COMMITTEE CON'T

OBSERVERS

*Dr. Katherine L. Goldsmith	Deputy Director, Allied Health Professions Projects, UCLA
*Miss Mary Jensen	Associate Director for Nursing Occupations, Allied Health Professions Projects, UCLA
Dr. Israel Light	Chief, Educational Program Development Branch, Division of Allied Health Manpower, Public Health Service, Department of Health, Education and Welfare
Alternate:	
Dr. Joseph Kadish	Education Specialist, Division of Allied Health Manpower, Department of Health, Education and Welfare
*Miss Ann Lewis	Consultant to Health Manpower Council of California, California State Department of Employment
*Mr. John K. Lopez	Projects Consultant, Minority Groups, Allied Health Professions Projects, UCLA

EX-OFFICIO MEMBERS OF THE ADVISORY COMMITTEE

Dr. David Allen	State Coordinator, Professional Resources Development Unit, UCLA
*Dr. Miles H. Anderson	Director, Clinical Instructor Training, Allied Health Professions Projects, UCLA
*Dr. Melvin L. Barlow	Director, Division of Vocational Education, University of California Professor of Education, UCLA
*Mr. Richard S. Nelson	Chief, Bureau of Industrial Education, California State Department of Education
*Mr. Bernard R. Strohm	Coordinator, Allied Health Professions, UCLA Hospitals and Clinics

---

*Present at meeting

"We particularly welcome the presence of representatives from other educational and governmental agencies in the group that will study and solve these problems. Let me wish you success and express the hope that as you move toward your stated objectives, you point the way for similar programs in other parts of the country."

At the conclusion of Dr. Proehl's address of welcome, the Chairman invited those present to introduce themselves and to state briefly the nature of their interest in the program to be discussed. Mr. Williams then presented Dr. Sidney High, Jr., the keynote speaker.

Dr. Sidney High, Jr. (Grant Advisor to the Allied Health Professions Projects), Instructional Materials and Practices Branch, Division of Comprehensive and Vocational Education Research, Bureau of Research, United States Office of Education

It gives me great pleasure to have an opportunity of saying a few things about the Allied Health Projects. It has been shaping up for more than a year and it is gratifying to see this real initial step being taken this morning for activation of the Project.

All statistical projections point to a need for about one million additional allied health workers by 1975, while indications point to a possible annual training capacity of some 9,000. It might well take 33,000 a year to allow for attrition and also meet increasing demand for the allied health skills.

In addition, there is the problem of information change and growth, in that in many of these occupations there is rather rapid technological advance, which creates a need for continuing education for persons already employed in the health fields.

As we consider projections like these, it becomes obvious to us that the rapidly expanding community college sector of the national educational establishment should make substantial contributions to the training of allied health workers, if the national needs are to be met. As you know, new community colleges are opening at the rate of better than one a week--some 60, during the last 12 months. In addition, many of the existing institutions are expanding and enlarging their facilities.

Many of these community colleges are cognizant of the need for allied health workers and are eager to provide training in these occupations as part of their institutional offerings. If left to their own devices, however, in view of limited funds, limited staff time and other limited resources to apply to the problem, the resulting training programs that

Meeting of the

NATIONAL ADVISORY COMMITTEE
for the
ALLIED HEALTH PROFESSIONS PROJECTS

Friday, September 13, 1968

Los Angeles, California

The initial meeting of the National Advisory Committee for the Allied Health Professions Projects was convened at Project headquarters at 9:00 A.M. Mr. Phillip Williams, the Chairman, stated the purpose of the meeting by summarizing the rising costs of health care and the growing need for health personnel. He emphasized that the primary purpose of the Allied Health Professions Projects was to provide the ancillary skills that would enable highly trained professionals, such as physicians, dentists, and nurses, to delegate those tasks requiring lower levels of training and skill, thus enabling each professional to concentrate on the essential tasks of his profession.

"This diversification of skills is something that we feel is important in business and industry and government, as well as in the field of medicine," Mr. Williams added. "Ways must be found to provide the personnel that will literally multiply the effectiveness of our doctors and dentists and other highly skilled professionals. We have met here today to lay the groundwork for such a program."

Mr. Williams then presented UCLA Vice Chancellor Paul O. Proehl, who welcomed the group on behalf of Chancellor Charles Young, and complimented the Committee on the broad range of disciplines it represented. He pointed out that his own experience as a lawyer had convinced him of the importance of enlisting the help of social and medical scientists and other specialists in the consideration of legal problems.

"I suspect the same is true of the healing arts," he added. "Professionalism always is in danger of turning into 'elitism,' which has negative results not only for the professional community involved, but also for the larger community which the profession is bound to serve. Thus, I find it reassuring that you have marshalled here so many resources from different disciplines to meet a pressing social problem.

"Your project accords with the view of Chancellor Young's administration that the large metropolitan university, such as UCLA, must be a strong, active social force in meeting the social problems facing us today. This is not a traditional role for the university, but it is a necessary one.

would spring up across the country would be of variable quality. Some might be excellent; others might be of much lesser quality. Moreover, with each college seeking to develop its own program, the result would be very wasteful and duplicative.

It seemed to us at the Office of Education that this was a case where a concentrated research and development effort could serve a real need by drawing on the resources of a representative sample of community colleges, major medical schools, hospitals, and the medical profession itself, to develop and validate some truly excellent instructional systems in the allied health area. Then, after careful testing and refinement, these instructional systems could be made available as replications at relatively low cost for use in community colleges throughout the country, thus improving the general quality of instruction and sparing the individual colleges the heavy initial cost of research and development of the instructional system.

With such considerations in mind, some Office of Education staff members consulted at length with representatives of the Bureau of Health Manpower in the Public Health Service and of the Regional Medical Programs in the National Institutes of Health, concerning features that should characterize such a major research and development project of this type.

Finally, on February 1, 1968, we announced that the Office of Education would like to entertain proposals for the conduct of projects in this field. We stipulated that the initiators of such proposals should represent a cooperating consortium including one or more community colleges, major medical schools, and appropriate professional organizations.

The central purpose of the project was to develop new programs for the continuing education of sub-professional health personnel, with the corollary purpose being to develop these continuing education programs in such a manner that some or all elements could become integral parts of the regular pre-service education program at the community college level.

The programs to be developed were to have the following characteristics:

1. The areas for training should be chosen on the basis of national and local needs. They should be responsive to large and growing manpower requirements and to rapidly changing technological requirements. In other words, they should focus on the most pressing training requirements, in terms of both personnel shortages and information change and growth.

2. The program should attempt to optimize the vertical and lateral articulation between courses of study.

3. The program should be based on job or task analyses which clearly identify functions, duties, responsibilities, and skills required on the job, and which indicate commonalities leading to a cluster or core approach to curriculum development.

4. The program should utilize the most current knowledge and technology related to the learning process. Appropriate use should be made of self-instructional techniques; the course should be individualized when possible; and the media and other instructional inputs should be validated in terms of their teaching effectiveness against specific performance specifications.

5. The programs in whole or in part should be capable of implementation in other community college institutions throughout the country with minimum adaptations.

Upon release of that announcement, we received 21 proposals from all over the country. Numerous consortia coalesced in a short period of time, constructed these proposals, and sent them in. We set up a special panel of specialists in the health area, manpower specialists, people from the occupational education area, and specialists in curriculum research and development. This panel considered all of the proposals that were received--all 21--and selected the three that seemed to be the strongest. Then a subcommittee of the panel made a site visit to each of the strongest initiators.

On the basis of the site visits, it was determined that the UCLA consortium offered the best promise for success. Then, in June of 1968, the grant was in fact awarded to UCLA, representing the consortium of community colleges and other institutions here in Southern California, to conduct the project. It has an anticipated duration from June 15, 1968, to June 15, 1972.

I think all of you are familiar with the basic project document itself. The University of California at Los Angeles is to develop exemplary instructional programs for the continuing education of existing allied health personnel and for the pre-service education of new allied health personnel at the community college level. It is anticipated that, after development and validation, the instructional programs will be made available for implementation in community colleges and other appropriate institutions throughout the country.

The project is to be carried out by a consortium of Southern California community colleges, eight hospitals, the UCLA Medical Center and the UCLA Division of Vocational Education. The project activities are being developed under the guidance of this National Advisory Committee. The procedural steps are to include:

1. Making task analyses in some 18 allied health occupational areas, with these tasks stated in behavioral terms.

2. Developing polysensory multi-media instructional packages against these behavioral objectives.

3. Testing and refining these instructional materials through controlled classroom and laboratory experiments.

4. Preparing the validated instructional packages for dissemination and use on a nation-wide scale.

At this point, we are very optimistic about the future of the project. We are impressed with the way Dr. [Melvin L.] Barlow has moved in assembling top-flight staff, convening such an impressive advisory committee, and beginning the initial steps. We believe the project is destined to make some significant contributions to the training of allied health manpower in the United States and, by extension, to provide better health care to the American people.

As the project moves into operation we see certain critical problems that must be faced and solved. The two most immediate ones concern the selection of the occupational areas in which to work, and the carrying out of the task analyses in these areas. In connection with the selection of the occupational areas, we are relying very heavily upon the judgment of the membership of this Advisory Committee as to which occupations are most critical in terms of (a) quantitative personnel shortages, (b) information change and growth, and (c) suitability for attention at the community college level.

We would hope that the occupational areas selected would be somewhat cross-sectional, including some occupations in each of three broad groups: those dealing with the administrative functions; those dealing with the patient care functions; and those dealing with the scientific and technological functions. It would be desirable to have a cross-sectional slice of occupations so that the project can gain some experience in each of these broad areas.

Once the general occupational areas have been selected, the problem of task analysis will have to be dealt with. I think this is going to be a significant contribution of the project, if it can come up with some new approaches in the area of task analysis. We have very good techniques for task analysis that have been developed by the Department of Labor and other agencies. These techniques, however, grew out of occupations that are hardware-oriented--such as analyzing the task of the milling machine operator, for example. These task analysis techniques have been perfected; they are highly effective in the hardware-oriented occupations.

UCLA has been a leader in this field. Dr. David Allen has done extremely significant work in the aviation mechanics occupation, using task analysis in construction of instructional programs in the aviation mechanics field. However, we need to determine the adequacy of these current techniques of task analysis. When you begin to analyze tasks in a medical or a hospital setting, in which you are dealing with things other than hardware--will these present techniques of task analysis work, or will they not? Do we need to modify these techniques, or to develop new techniques to cope with the problems in the medical area?

Incidentally, the Public Health Service and the Department of Labor have a small study going on at the hospital [no identification] on Staten Island in which Department of Labor experts in task analysis are working with Public Health experts. They are applying these techniques within a hospital setting to determine just that: to what extent do these techniques work in the hospital setting? Do they need to refine and develop some new techniques? As this study at Staten Island proceeds, I think we need to keep very close liaison with the results of that study for the benefits that can be applied here to the task analysis that will be undertaken. Those, it seems to me, are the most pressing problems--the selection of the occupational areas, and the beginning of work on the task analysis.

Looking farther down the road, maybe a year from now, after task analyses have been constructed and performance objectives stated in behavioral terms, then there will come a whole different type of operation. That will be the building of multimedia instructional systems matched to these performance objectives. Here, we hope, the project will be extremely imaginative. As we indicated in our original announcement, we'd like to see the latest in educational technology applied to the problem--whatever will be effective learning interventions, whether it be the use of video-tapes or 8 mm film or programmed text material or clinical experience or whatever can be built in as learning interventions to enable a student to achieve these performance specifications. We would hope that they would experiment with and empirically validate the effectiveness of these and come up with some very modern and very effective instructional systems that they have established in their task analyses.

Then, looking even farther ahead--two or three years from now, when these systems have been fully validated--we would face the problem of disseminating this material as widely as possible to community colleges and other institutions around the country that would be interested in using them. We would think at that point, with the R&D work pretty well accomplished, costs could be brought down so that the replication of these systems in other colleges would be quite reasonable and most community colleges could afford to use such systems.

So this is the background of the project and a little projection of the future as we see it. Thank you for the opportunity to present it.

In response to questions and comments from the floor, Dr. High made the following additional comments:

"The community colleges would not necessarily be the sole agencies for eventually using what is developed through this program. We would hope that these components would be in modular form and, for example, particular components could be pulled out for use in a hospital setting for continuing education of people within the hospital or other institutions."

[With respect to private and technical institutions that might possibly benefit] "We hope the materials would be used as widely as possible. Our focus is on the community colleges because they seem eager and ready for such systems; but we would hope the materials would be used far beyond the boundaries of the community college."

[With respect to maintaining the necessary clinical ingredients and quality of instruction required for proficiency, in contrast to attempting to provide clinical elements in the classroom] "I share 100 percent the conviction that whatever program requires hospital resources should include the hospital ingredient. When I speak of an instructional system in the sense that we've been using it in my organization, this would imply that the clinical experience would be a planned part of that instructional system to help meet the objectives that are stated for the output end."

Comment (speaker unidentified): "You mention clinical experience in connection with continuing education, and of course that's wise. It's equally wise to mention it in connection with the very beginning. In fact, some of our shortest courses of instruction take place almost entirely in a clinical setting."

Unidentified Questioner: Will community colleges be the sole agencies for eventually using what is developed through this program?

Dr. High: Not necessarily. We would hope that these components would be in modular form and, for example, particular components could be pulled out for use in a hospital setting for continuing education of people within the hospital or other institution.

Question: What about private and technical institutions that might possibly benefit?

Dr. High: We hope that the materials would be used as widely as possible. Our focus is on the community college because it seems to be a place that is eager and ready for such systems; but we would hope that they would be used far beyond the boundaries of the community college.

Mr. Kuhli: We in the medical profession are concerned that the presumption might be that clinical material can somehow be brought into a classroom and learned out of some exotic new TV device. We are concerned about maintaining the necessary ingredients and quality of instruction for proficiency, including the clinical requirements. Somewhere along the line we'll have to recognize and identify in these programs whatever it is that is essentially of a clinical nature. Whatever requires hospital resources will somehow have to include the hospital ingredient, and we mustn't presume that somehow we are going to dream up this program so we can do it all in a classroom.

Dr. High: I would share that concern 100 percent. When I speak of an instructional system in the sense that we've been using it in my organization, this would imply that the clinical experience would be a planned part of that instructional system to help meet the objectives that are stated at the output end.

Mr. Kuhli: You mention that in connection with continuing education, and of course that's wise. It's equally wise to mention it in connection with the very beginning. In fact, some of our shortest courses of instruction take place almost entirely in a clinical setting. The clinical material ought to be taught in a clinical setting to the extent that is necessary, i.e., to the extent that this is essential for the development of the necessary proficiency.

Mr. O'Farrell: I presume that in the development of these curricula, consideration would be given to making selected clinical facilities available to the junior college. This is work that already is being done, I think. The American Hospital Association has a statement relating to the use of clinical facilities.

Dr. High: He's referring to this publication--"A Guide for Health Technology Program Planning." One of the co-authors is here--Lev Mendel of the National Health Council. They did this job in collaboration with the American Association of Junior Colleges. It was an earlier project sponsored by my division.

Mr. O'Farrell: Here is another guide, titled "A Guide to Using and Selecting Clinical Facilities for Health Technology Programs."

Unidentified Questioner: Will these publications be available for distribution?

Dr. Anderson: Yes. The copies we ordered unfortunately have not arrived in time, but we'll see to it that you get them.

Dr. High: Over the past four fiscal years, 31 projects related to the allied health occupations have been sponsored by the Office of Education. I have a supply of summaries of these projects indicating how copies may be obtained either in microfiche or in hard copy through ERIC.

Dr. Melvin L. Barlow, Director, Division of Vocational Education, University of California; Professor of Education, UCLA

Most of the significant elements of my talk already have been presented, but I would like to comment on my own experience with the Allied Health Professions Projects.

While I was in Washington during nearly all last year as Staff Director of the National Commission on Vocational Education, this matter of allied health programs came to our purview time and time again. When the Office of Education announced this particular program early this year, it seemed like something ready-made for us at UCLA--we had tremendous interest and resources available; so we went to work on it.

I knew from my experience last year that this was a very important area for consideration, but I was astonished to find that even before we were officially notified that our grant proposal was accepted, we began to get letters and phone calls from people and organizations all over the country indicating their great interest--and this was even before we knew that we had the grant. One arrived just yesterday from the American College of Radiology. All of these communications had one common theme--that there is a tremendous need for what we are doing--and this of course weighs very heavily upon us. Vocational education, of course, invented the advisory committee a good many years ago and we have long since learned how to use them. Here at this meeting we have people with competencies that are very important.

I would like to add, Mr. Chairman, that in Dr. Miles Anderson, our Project Director, we have one of the top people in the field qualified to do this work. He not only understands the task analysis mentioned by Dr. High; he also has had 16 or 17 years of experience working in the allied health fields. When I was in Turkey recently I was pleased to see one of Dr. Anderson's books on a bookshelf in the medical school at Ankara. So he is known beyond Los Angeles; he has many friends and contacts; and he doesn't settle for less than the best.

The Chairman

Since there are no questions for Dr. Barlow, and since a major purpose of the meeting is an interchange of opinions and reactions, the next item on the agenda will be a preliminary statement by each member of the Committee concerning his interest and participation in the Allied Health Professions Projects. We don't want to force anybody into making premature statements--there will be time toward the close of the meeting for them to tell us how they feel they can contribute to this project.

Richard S. Nelson, Chief, Bureau of Industrial Education, California State Department of Education

I would like to summarize the State Department of Education's interest in this project. For over 45 years, the Department has had a contract with the University of California Division of Vocational Education for the training of teachers and the development of curricula and instructional materials. Last year, we had more than 1,500 trade and technical teachers involved in part time and summer school activity.

We have been working hard trying to find a workable way of developing performance goals as applied to the task inventories of the jobs in which people work. One of the successes of this project has been with and through Dr. David Allen of the Division of Vocational Education and Dr. Milo Johnson of Mt. San Jacinto Junior College. Some of the activities and teaching materials actually have been developed and tested in the junior college setting.

Some of the material we have developed Dr. Johnson will share with you this afternoon.

We have provided training for teachers who have worked successfully in the health-related occupations, who now are going to become teachers in our adult schools, and perhaps in our high schools or junior colleges, in the medical assistance fields--Medical Technicians, Licensed Vocational Nurses, Health Aides, Inhalation Therapists, Dental Assistants, Dietitian Aides and Food Service Technicians--to name those that relate to the allied health fields.

I'm happy to see that this project is moving into a scope that will permit us to further develop specifically in the allied health occupations some of the techniques and materials with which we have had success in the past.

C. L. Roberts, Executive Director, Association of Rehabilitation Centers

The Association of Rehabilitation Centers is both concerned and interested in this project because we already are deeply involved on two levels. The Association in 1966 and 1967 sponsored two national institutes on the selection, training, and utilization of supportive personnel in rehabilitation facilities. We define supportive personnel broadly in the sense of training programs at less than the bachelor's degree level.

In addition, and perhaps more significantly, we are involved with the Labor Department and the Office of Education in a couple of contracts for the training of personnel in rehabilitation centers. We have just completed the second such contract and have completed training of about 2,000 supportive personnel in rehabilitative occupations. These training programs are at about the six-month level. They all take place in a clinical setting. I find in reviewing your ERIC report, Dr. High, that the Office of Education obviously is involved in more programs than are listed here, because we're not listed, possibly because we have not been working under direct contract. About 20 percent of the money involved is from the Office of Education, on a coupled contract.

I'd like to commend the University for being able to get a project funded through a single national federal office. I never had seen anything quite so complicated as trying to work cooperatively with two federal offices. We're doing so with some success, so we're very much interested in your project from the standpoint of being involved in the same sort of thing ourselves.

Our experience to date indicates that training on-the-job at the six-months' level leaves much to be desired. It indicates very clearly to us the need for standardization of curricula and certainly the need for training at more than a six-month level. So we're very much interested in what is going to be developed here.

Levitte Mendel, Associate Director, National Health Council

I'm saving some of my remarks for later, when they may be more pertinent. You probably know that the Council got into this business of education at less than baccalaureate degree as a sort of developmental thing. It came out of a long-range burden we have been carrying on for the last 15 years.

In 1954, we got into the business of recruiting for the health services. As many of you remember, at that time when you recruited for the health services area you were talking about dentists, doctors, and nurses. Although some 70 or 80 other professions were recognized at that time, they just didn't seem as important in those days as we recognize them to be now.

Then, gradually along came all the less-than-baccalaureate degree specialties and we began to recognize need for recruitment for this group. But we found that once we had recruited these young people, there was no place for them to train, particularly because the young people going into these professions like to receive their training somewhere near home. It's easier when the facilities are near by and a good many don't seem to have the money to go away to school.

I think, although generalizations are dangerous, that people less able to get into medical school or into the more expensive training programs are more apt to go into the less-than-baccalaureate degree areas. For instance, our recruitment efforts in the farm areas are more successful than in other economic levels.

We began to realize that if we wanted to develop programs at less-than-baccalaureate degree level, we had to work with the schools doing training in this particular area of education. We then jointly worked out a program with the American Association of Junior Colleges. And as we started working with them, it became clear that as two national organizations we should not become involved in educational programs--the thing that you're going to do here--the thing that we're so pleased about. Rather, we should be working with other national organizations to develop some way of working with the school systems.

So what we did was to develop this Guide to Health Technology Planning. Apparently we hit the nail right on the head for the time at which it came out, because almost immediately it was in demand all over the nation. We now have some 20,000 copies of this guide distributed to the partners involved in the program--the schools themselves, the community or junior colleges, the professional organizations, and the persons and institutions who hire and employ these trained persons--the hospitals and clinics and so on. So what this guide is all about is a suggested plan or technique by which these three partners can work together to develop the program that is necessary to come up with health technology training.

In my remarks this afternoon I'll discuss some precautions the staff here might take as it swings into operation. One problem we ran into with these professional groups was that the major professional organizations had not identified or recognized some of the less-than-baccalaureate programs that were already in existence. Schools were training people for jobs that the professions themselves did not recognize. I'll bring this up again later, when it may be more pertinent.

Dr. R.L. Matkin, Assistant Secretary, Council on Dental Education, American Dental Association

I'd like to preface my remarks with a comment on Mr. Nelson's talk. As a possessor of two different teaching credentials in California, and having participated in the Trade/Technical Teacher Education Program in order to obtain my credentials, I can attest to the value of what the University is doing here and in Berkeley. I also would like to say that the Council on Dental Education feels that the community college is the extremely appropriate place for the training of our dental auxiliary people. And I also would like to express appreciation on behalf of the American Dental Association and its Council on Dental Education for the recognition accorded us in being invited to serve on this Advisory Committee.

The Council's staff members are excited about the potentialities of this project for the development of an instructional system as they relate to the dental auxiliary field. We are confident that the results of this research project will bring about an increase in the numbers of better-qualified members of the dental health team. Further, it is anticipated that some of the materials, techniques and approaches may be adaptable to other areas of interest in the dental profession. We hope that through this research project we will gain new insights and approaches that can be adapted to continued education for our profession as well as for improving upon the instructional process now being used in our many dental auxiliary programs.

I feel quite confident that the American Dental Association through its Council on Dental Education intends to support and actively participate in this project to the extent deemed appropriate by the project directors. Further, I offer whatever resources, manpower, advice and consultative services that are available to us.

Clyde J. Lindley, Executive Secretary, Advisory Council on Education, Veterans Administration

The Veterans Administration is very pleased to participate in this project as we have been engaged in the training of health workers for a number of years and we see this as a very great opportunity to add to our own training resources and perhaps to the manpower of the Nation. We have 166 hospitals throughout the United States and 115,000 beds, and this represents a potential for the clinical facilities so important to the training programs you are attempting to undertake. We have been cooperating with medical schools, and universities, and community colleges, and schools of nursing--a lot of groups--in the training of allied health personnel. We have affiliations with 79 medical schools that work with 93 of our VA hospitals. In the last year, we have trained 32,000 health workers, and another 11,000 under the auspices of Office of Economic Opportunity programs.

I think many of you are aware that Public Law 89-785 recently gave us a mandate for training which we never had before, although we were doing training. Legally, there had been no basis for us to do this in the law of the Veterans Administration. This law authorized us, in addition to our programs in medical care and research, to engage in training for the Veterans Administration programs of care for the veteran. We have interpreted this rather broadly to indicate that needs are so great at the present time that we can expand a great deal and help train persons for the whole area of health manpower besides the VA. We plan to go to about 88,000 persons in training by 1974.

Our expenditures for training now are in the area of $44 million. We plan to increase them to $250 million. So this potentiality for expansion of our training programs is great.

Let me suggest the potentialities by indicating briefly some of the types of training programs in which we now are engaging: in Audiology and Speech Pathology, we've trained 163 people. In Blind Rehabilitation, 23. Certified Laboratory Assistants--28; and we expect to increase this to as many as 200.

In Clinical and Counseling Psychology--700 people. About 90 percent of the 9,000 Clinical Psychologists in the country today have received all or some part of their training in the VA. Dental Assistants--230. Dental Hygienists--470. Dietetics--435. Inhalation Therapists--128. Pharmacy Student--200. Social Work--670. And then, of course, Medical Students--10,000; Basic Nurses--10,000; Practical Nurses, 1,000; Medical Residents--3,700; Dental Residents--80.

Actually, the occupations that we've trained them for in cooperation with participating universities and medical schools and junior colleges run the gamut of the health professions. The President of the United States in his message to Congress in January, 1968, praised the VA for its current training accomplishments and then he said, and I quote, "There is room in the VA system for even more, and there is a pressing need in the Nation for more," and he asked that the VA participate and help the whole Nation in the training of health manpower. So I think you can see we are ready in the Veterans Administration to cooperate with community colleges, junior colleges, and any other schools in the training of allied health personnel.

Dr. Dale R. Lindsay, Assistant Chancellor, Research and Health Sciences, University of California, Davis

I'm a novice in this particular group of professionals and am a bit uncomfortable here because I don't know how much I can contribute to the deliberations here. The interest of our campus at Davis is that we are trying to determine whether there is a role for the university in the area of wide-spectrum educational training that ranges from the vocational to the most sophisticated of research. I've been quite interested in this and have visited nine of the member schools of the

Association of Schools of Allied Health Professions, including Dr. Perry's, at SUNY, and also three schools that turn out a lot of allied health professionals without being formally identified as schools of allied health professions. I hope to learn a great deal from this group. You might call my attendance here a matter of self-enlightenment.

Dr. J. Warren Perry, President, Association of Schools of Allied Health Professions; Dean, School of Health Related Professions, State University of New York, Buffalo

The formation of our new association was brought about by those educational institutions that in their own innovations have raised the status of the allied health professions in schools and colleges. As many of you know, traditionally these programs have been functioning in the basements of medical schools, in the areas of education, and in similar spots where they have not had the opportunity to work closely and at the level of a college or a medical school.

Our membership in the new Association, because we see our roles in the allied health fields, are greatly interested in the project being developed here at UCLA. Seventeen institutions now have joined our Association of Schools of Allied Health Professions. The majority of these institutions have taken on the concept of a health sciences center. The medical school is one of the colleges in such a health science center. The other areas are dentistry, nursing, and the allied health professions, and in a number of the institutions, pharmacy as well.

The individual colleges are headed, as usual, by deans; and in the last four or five years we find that deans are being named to head the allied health programs. The institutions that have innovated to the extent of giving this kind of recognition to the allied health professions include the University of Florida, University of Kentucky, Temple University, Ohio State University, Medical College of South Carolina, Indiana University, University of Pennsylvania, Boston University, Northeastern University, University of Illinois, St. Louis University, Loma Linda University out here in California, Oklahoma, Missouri, Medical College of Georgia, the SUNY Downstate Medical Center in Brooklyn, and of course the SUNY school in Buffalo of which I am Dean. These are the institutions that have qualified for membership in our association, but we know of more than 40 other major institutions involved in planning along these lines.

All of these institutions are vitally interested in our relationships to the community colleges and community college programs. Many of us in New York State have been very much interested in the Kinsinger Project [sponsored by the W. K. Kellogg Foundation] for the training of curriculum directors in the community colleges and are working in these areas. Some of the institutions in this area are playing an active role of leadership in relation to the community colleges in their own immediate areas. The same kind of consortium that has been put together here and has been working on this UCLA project already is in operation of many of these other centers. So the outcome of this project, particularly those innovations you have mentioned as they relate to teaching methods and such, will be of great interest to all of these institutions. The community college programs are working and will be working much more closely with the new Association of Schools of Allied Health Professions and Ken Skaggs, whom many of you know, and with the allied health program. Ken has been working very actively with us in these programs.

We're opening a new executive office for our association in Washington. We're very short-lived in terms of the period of our grant from the Kellogg Foundation--rather than accepting Federal dollars we've gone to a private source--if we took Federal funding we'll certainly get into project areas.

An executive director has been appointed, a man whom quite a few of the folks here know through prosthetics and orthotics-- he's Dr. Jack Arnold of Northwestern University. A drive will be started soon for individual memberships, but we look at this not as any move to replace relationships in terms of areas, such as nursing, PTO, OT, and all these other areas, but rather as an opportunity for interdisciplinary action in these areas. More than 90 persons have sent in individual memberships. Associate memberships have been sent in, even before the membership drive has started, from the American Physical Therapy Association and other groups.

I've talked a great deal about the Association and you can see, from the universities' viewpoint, its great interest in relationships with the community colleges. I share the feeling already expressed that the community colleges that get involved in allied health need to work extremely closely with medical areas--I do not speak specifically of medical schools, but of medical communities--as they plan their clinical programs. The universities involved in this can play an invaluable role of coordination with and among the community colleges. Certainly many of the teachers for the community college programs should be coming from our universities in these areas, and are, at the present time.

From the standpoint of the State University of New York, if I many change hats at this point, naturally we are very much interested in the UCLA project. From our university which, as many of you know, is very much shorter lived in time, we have put together in the last six or seven years some 50-odd community colleges. Four University centers will have Schools of Allied Health Professions in our state alone, not counting the private institutions that will be involved in this.

The University Center at Buffalo and Stony Brook, the Downstate Medical Center at Brooklyn and the Upstate Center at Syracuse all are intimately involved in allied health training, and I am sure that the other areas of our University certainly will be very much interested in this project.

John K. Lopez, Economic Assistance and Development Companies

My contribution will be mainly that of a resource person. As you well know, there is a great deal of concern nationwide with minority groups, not only as beneficiaries of these allied health techniques (because they have lower health standards), but also because they will become the prime applicants for training in a great many of these techniques that are offered through the educational system. So my involvement will be that of contributing to any minority definition.

Dr. B. Lamar Johnson, Professor of Education, UCLA, representing the American Association of Junior Colleges

I've worked in teaching research in the university in the field of the public community college and my interest in this project emerges directly from my work in the junior colleges. Such contributions as I am able to make will, I hope, be in terms of my background in junior college development, and particularly in being of all possible assistance in developing cooperative working relationships between this project and the community colleges you would like to have involved.

All of you probably know that this project in Southern California is located in the world's greatest concentration of junior colleges. Aside from the resources and leadership of the University and other agencies, I think it most appropriate that the project be located here. We at UCLA, through a number of projects funded by the Kellogg Foundation and the Danforth Foundation, have developed cooperative working relationships with the junior colleges in which we take particular pride. I know of no other group of public educational institutions associated with a university in a finer working relationship that we have.

The presidents of the 45 junior colleges in Southern California are organized as an advisory council for the UCLA Junior College Leadership Program. Each of the colleges represented here -- Mt. San Jacinto, Los Angeles, San Diego and Long Beach -- is included in membership on this advisory council, which is a very active agency. Milo Johnson is chairman of the steering committee of that group and on Monday at Lake Arrowhead we begin a three-day conference of junior college presidents that will be attended by approximately 45 presidents. This is the type of thing that we engage in: we have conferences, we conduct research, we have reciprocal projects, and the like.

As I sit here, another aspect of relationship has been brought to the front of my mind -- that the Allied Health Professions Projects are an action project, not a theoretical project -- it's an action project getting into action. And I also am impressed with the fact that it has anticipated -- essential to its effectiveness and success -- that it become national in scope.

From what I have heard here and previously, it appears that we will wish to get an involvement of community colleges in other parts of the nation. I wish to refer you to a recently formed organization in which we at UCLA have been asked to participate and to take some leadership, that may at some stage of development develop bonds of mutual interest with this project. I refer to the League for Innovation in the Community College, an organization of 12 junior college districts including more than 30 different campuses throughout the Nation. Included in its membership are the junior college districts of St. Louis, of Dallas, Chicago, Seattle, Delta District in Michigan, Santa Fe in Florida; and in California, Los Angeles, Orange Coast, Bakersfield, Peralta (in Oakland), Los Rios (in Sacramento), and Foothill. These 12 institutions are organized to work cooperatively on innovative developments and projects.

Mr. Howe, who is associated with me, and I are working on staff for the central office, which is located in Westwood Village. I just have visited several members of the League and was reminded, as Dr. High referred to the use of multi-media instructional materials and systems, of a visit to Delta College District in Michigan. Delta, working under a project, recently produced some one hundred single-concept films for use in the teaching of nursing. These films now are in process of being produced for commercial distribution by a national publisher. It seems to me that the try-out and utilization of some of the materials from Delta might have relevance for your project.

On a recent visit to Peralta Junior College District, in Oakland, I learned that Peralta has recently made a study of paramedical education in that district with the purpose of identifying areas of need and establishing specifications for program and development facilities, and I commented to Mel Barlow that this was a project in which the staff here would be interested.

I make these comments as illustrations of ways in which an agency already in existence -- the League for Innovation -- may be of cooperative assistance in some of the things that you're doing, and may provide opportunity for the dissemination of what I am confident will be some tremendously significant findings.

I want you to know my pleasure and that of my associates in the Junior College Leadership Program and other activities at the University in being here and participating actively in this notably important undertaking.

Miss Georgeen DeChow, Member, Commission on Nursing Education, American Nurses' Association; Director, Department of Nursing Education, Manatee Junior College, Bradenton Fla.

We of the American Nurses' Association are pleased to have an opportunity to participate in the work of this advisory committee. The nurse is a significant health professional, as we all know, and there is indeed a great shortage of nursing personnel.

Sixteen years ago we started the first junior college program for training a Nurse Technician -- a Registered Nurse Technician. More recently, we moved within the profession of nursing itself to more clearly define the professional and technical practice and education for our practitioners. But we have for some 16 years been preparing a nurse technician kind of allied health person with which we are going to be concerned in this project. Probably the largest group of nursing practitioners in the future will come out of this kind of training.

In just the last few years, we have seen great proliferation of these programs. When we initiated our program at Manatee Junior College ten years ago, we were perhaps the 35th such program in the nation. There are at least 325 operating programs this year, and they are increasing very rapidly.

We suffer, as everyone else does, from a severe shortage of trained faculty for these new programs, so that we at the ANA certainly can see as one of the outcomes, if this project is well done -- as we certainly believe it will be -- materials which will have a real impact on the quality of the programs that are being developed in nursing.

We are pleased to have the opportunity to participate and to bring to this committee whatever knowledge and whatever expertise we at the ANA can contribute; and we are certain that the outcomes of the project will be utilized.

Dr. Paul E. Klopsteg, Member, National Academy of Sciences-National Research Council

I am especially pleased to see my old friend Miles Anderson at the head of this project because our acquantance goes back to the days of World War II, when we both served on the Committee on Artificial Limbs set up at the request of the Surgeon-General of the Army, who wanted artificial limbs "standardized." There was nothing to standardize, because each of the 340 manufacturers of artificial limbs felt he had all the answers, which he didn't want to share with anybody.

So this committee of 70 or 75 people met in Chicago in January, 1945, and quickly discovered that 70 people can't decide on anything. So we were broken into small working committees, out of which finally emerged a much smaller committee to study what the problems really were.

The committee quickly realized that the technical or scientific or engineering aspects of artificial limbs were just a very small part of the total problem, because up to that time after the surgeon had performed his amputation and saw that the patient was getting on pretty well, he departed from the picture, and eventually an artificial limb maker might fit a limb to the amputee, who had to get along with it as best he could. Many an amputee just put his limb in the corner and never used it.

The thing that I most vividly remember, and that is so germane to this project, was that to rehabilitate the amputee required teamwork, perhaps headed by the surgeon, and the team comprising perhaps a psychologist or even a psychiatrist, a physical therapist, the maker of the limbs and the trainer in the use of the limbs, and perhaps even others. Now, with the years that have elapsed since that first meeting in 1945, and the experience that Dr. Anderson has gained, I'm sure a much more sophisticated approach will be made to the problems that face us, and I look forward to great success in this project.

Dr. Joseph A. Gallagher, Deputy Director, Bureau of Health Manpower, National Institutes of Health

I'm at the Bureau of Health Manpower in the National Institutes of Health, and obviously, from the title of the operation I represent, I could talk from right now until four this afternoon about how interested we are in this project, but I'll restrain myself. My particular interest here is in the study of curriculum. We've been working on this in the various fields that the Bureau has established. We have been working with the American Medical Association, thinking in terms of what it really is that a doctor should do -- what would his job description be if we could make one? Dr. Hudson, when he was president of the AMA, was particularly concerned with this. We are hoping that if we ever can get this accomplished, then we can find out specifically what the nurse should do and what the allied discipline should do.

I think you're moving very well in this direction, and I hope you'll set a precedent for the rest of us, so that all the other disciplines should be able to move in this direction. I think this would start in on the question of utilization, which I think is probably one of the most important items in helping to solve the health manpower problem. We're all going to do some of the same things to some extent: I think we're going to get the proper utilization involved. So I hope that from this study we can take the next step, which is probably right along with what you're studying -- exploring the utilization of allied health personnel -- and really come up with a "team" concept. I don't like the word team because I don't know what it consists of, but I don't know a better term than that.

As for determining a role of the junior college -- and I congratulate you on this -- I think it might start the ball rolling in determining the role of all of us in this business. We were so concerned about it that about four months ago we called some presidents of universities, colleges, and junior colleges together in Washington and asked them what they thought the role of each of them was in education per se, as they related one to the other and to the country. Then, if they could decide this, what is the role of each in the health disciplines; and if they could decide this, what is the future role. Well, frankly, we hung up on the first one for six hours and didn't get it completed, and we're going to have another meeting this Fall.

This brings the question to us again--what is the role of the Federal Government? I think we're right at the beginning of determining major social policy. I've been spending a great deal of time trying to figure out what is the role of others in Federal Government--including foundations, industries, State Legislatures--the whole works. Again, I think you've started something we can follow up on in a great many instances.

I'm not sure just where it all is going to lead, at this point, but I find that others in the Federal Government are extremely interested in this whole situation, and I hope you folks will keep us completely aware of what is going on here in your findings, because we are going to be writing the new allied health manpower part of our legislation in the next year, and we're waiting for committees such as this to help us find out what kind of legislation we should write. We held it back for just the one-year continuation because we wanted to know just how it worked after a year of operation. So keep us advised of what you're doing and of any way we can help. We have consultants--we have people around the country with whom we have been working--and we can bring together a lot of things to help where needed. All you have to do is push the button.

Brig. Gen. James A. Wier, MC USA, Staff Director, Health and Medical, Assistant Secretary of Defense

I'm here from the Department of Defense representing Dr. Louis M. Rousselot, Deputy Assistant Secretary, Health and Medical Manpower and Reserve Affairs in the office of the Assistant Secretary of Defense. Until the gentleman from the VA spoke, I was going to claim that we have the biggest programs of training and utilization of technicians, nursing aides, and the whole gamut of the allied professions of any organization in the country. I still think we have--in fact, we have the figures to support the claim, but we don't have medical students taking part, as the VA does.

Actually, our programs are quite similar to theirs and we have great overlapping in many of our pre-military programs. We at the Department of Defense have been vitally interested in this subject for years. We use non-professional people extensively for staffing many of our positions all the way through the pre-military services, ranging from glorified first-aid men who render first aid on the battlefield, up through roughly the equivalent of practical nurses who are taking the places of nurses in our hospitals.

We are training these people in totality from the beginning, taking a basic trainee, if you will, and raising his stature. We are training throughout the entire scope of the technician--Laboratory Technicians of all types, X-ray Technicians--I think that without exception we have training programs in every field you have listed here--training programs that we have been operating certainly since the beginning of World War II.

I think the military services are probably the greatest developers and users of the so-called standard forms of instruction, in which formalized lesson plans are drawn up and are followed in our training programs throughout the three military services. This has many good aspects and some bad ones. It gives us a standardized product from our programs. It allows us to use less well-trained or less professionally well-trained teachers in the programs, and still to turn our a quality product.

The programs range in their scope and duration from weeks to months and, in a few instances, to several years. A few of those in the higher echelons are tied in with affiliated programs at the universities, junior colleges, what have you.

I think that in the past we have been perhaps the greatest supplier of this type of personnel to civilian medicine. We have a constant raiding of our training personnel in every part of the country. The hospitals are quite anxious to get our nurses' aides--our so-called managers--the equivalent of the practical nurse. They are constantly in demand in many areas for moonlighting jobs at night. Many of the wards in the San Francisco hospitals are staffed in part in the evenings with technicians from Letterman Hospital, and this is true across the country.

In addition, there are people coming out of the Armed Forces who were trained in the two- and three-year programs we have in periods of large national draft. These will be joining the civilian community and perhaps will be the nucleus for many of your programs. I mean that they will be moving into the programs that you develop here.

We certainly will have a vital interest in mechanics or methods of teaching that are developed here. We have no illusions that our own programs are the answer to meeting personnel needs, and we all are hoping for a better way of doing things. I think certainly that the methodology you are developing will be of great interest and value to us; and possibly some of our programs will be helpful in providing guidelines and bases from which to start in developing some of your own programs.

I was quite interested in some of Dr. Gallagher's remarks about the role of some of the personnel. We, too, are interested in it and particularly in the utilization of our people who are substituting for professionals, and the legality of this practice. We have done so extensively, generally in treating our own military personnel, where the problem of legality is not quite as pertinent as it is in other areas.

I was quite distressed to see a statement from the American Hospital Association or somebody from their organization, discussing emergency care in hospitals, in which the fact was stressed that a doctor or other practitioner had to see every patient of this sort, and implying that it is illegal not to do this. I agree that we need a great deal of help in standardizing what is allowed--what would be illegal or legal, in the sense that we should not be faced with malpractice suits if we develop programs in which someone other than an M.D. is perhaps screening or treating the patient. We have used our first-aid men or technicians extensively as screening personnel in our military dispensaries, and this is used extensively through medicine all the way into the hospitals. We were thinking of having some of our sick calls in the hospitals actually conducted by a nurse rather than a doctor, and this to me is related to the question of legality. I pointed out that in civilian hospitals they do this in the wards, where the sickest people are--the screening of the patient is done by the nurse, and frequently she is the one who makes the decision whether the doctor will be called to see the patient. So many of the things that we are fearful of doing we actually do, in another place and under more serious connotations.

We have one other particular interest in this program. You probably are familiar with the fact that for a number of years Congressman Hebert [of Louisiana] has been pushing for establishment of a federal medical school--a federal medical academy . The Secretary of Defense was directed this year to look into the proposal in depth, and if we disagree, to come up with some alternatives. One of the proposals being considered, in which Dr. Rousselot concurs personally, is the possibility of a national university of the health sciences, or something of that sort, which would be not a medical school, but a national university, and not under any of the branches of the Government. It would be of the health center type, with a medical school, dental school, school of pharmacy, and all of the allied sciences, hoping to get a central place where we could perhaps put some of our programs under university leadership, and his proposal would be that this should not be an Army or a Navy or a Public Health hospital institution, but rather a National University of Health.

Dr. John Lombardi, Assistant Superintendent, Los Angeles Junior College Districts

I'm in charge of eight junior colleges in the Los Angeles system, which comprises about 850 square miles running from the West down to the Harbor. We believe in autonomy; each college is a unit in itself. Our role in the District is not a very serious one, but we know what it is, and we see that here in the Allied Health Professions Projects is an area in which we should be participating. In fact, we have been participating in it since 1935, at the start of the Los Angeles Junior College System.

We're not quite sure, however, that the professional organizations know what our role is. We sometimes become a bit discouraged about the reactions of the professional associations. I am disturbed, for instance, to find that the Registered Nurse now becomes a technician. The Registered Nurse has the qualifications--must have the qualifications--and there are RN junior college programs that are comparable to the qualifications that any university has.

In any study we have followed, it has been shown that the registered nursing students are the top students in the classes, as judged by the national tests. This is true in Illinois and it is true in Los Angeles and at the University of California. So I think that what we have done in the junior colleges is to downgrade the position, and this is going to create problems for us unless we also downgrade the people going into it, because if these people have the necessary qualifications they are not going to go into registered nursing [at the junior college level] if the RN becomes a technician. This is a future consideration that must be borne in mind. This is one of our problems.

Another problem is that the professional associations have preconceived notions about the kind of education we should provide. They want technicians--yes--but they want education of a professional character.

We have another problem, not so serious, but it is a problem, so I'm glad we have one member here to speak for minority groups. I recommend that we ought to have another minority group represented because this is a very serious problem, and that is, the race barriers that exist in some of the vocations for which we provide training. There really are race barriers. One vocation has a very high race barrier, very difficult to surmount. If you want, I'll tell you about it privately.

We also are worried about curriculum patterns. As you notice, we train for about 20 occupations. Well, if you take a college with a thousand students and offer 20 curriculum patterns, divide 20 into 1,000 and you start out with an average of 50 students for a curriculum. By the time the two years are up, you may have five or ten left.

Of course this is a problem, and I'm glad this group is going to consider such groupings as core areas. This also will help us with costs. These programs are very expensive and it causes a lot of soul-searching before a college goes into a new program.

Registered Nursing has been a good glamor program for us --it gives us prestige so we go in for it despite the fact that we have only one teacher for nine or ten students. It is a very expensive program and this curriculum pattern that the Allied Health group may develop will help us a great deal. If we could combine areas and have all paramedical or paradental students, for example, take a pattern of courses that would be usable for everybody, then we could dilute this expenditure for the program by having a sizeable enrollment for it.

We are very much interested in audio-visual materials in all of these programs. Radiological Technology, for example, cannot be taught without it. I am very much interested in seeing what my colleagues have been doing in using it throughout the other areas.

So we know what our role is, we've been in it a long time; we hope that this core pattern can be developed; and we hope also that we can distribute the program.

With eight colleges in our system, we distribute a program. We do not permit a college to open a program that has been started in another college until it has been proved that the latter college has enough students. There would be considerable risk of failure if two colleges instituted a program which attracted eight or nine students; one college might get enough students to make it worth while, while two might not.

For example, let's take Optics. That program has been in existence for 20 years and we never have been able to get more than 20 or 25 students to start the program, and of these 20 or 25, perhaps five or ten have gone on to optician school. Obviously, they chose the junior college as a way station on the road to becoming doctors, instead of taking the training to go into the technical program. So we won't permit another college to go into Optics, because that would mean dividing some 20 students between two schools.

We think, also, that we should be discussing joint decisions of this sort with colleges outside the Los Angeles District. We're near El Camino; we're near Glendale; we're near Long Beach. There is no reason for all of us to go into a program like, say, Radiologic Technology, which suddenly started. We had 30 graduates after the first class, so we don't have to worry about that one. Now, we're looking for another school in which to schedule Radiologic Technology--that subject has somehow taken hold, whereas Optics has not.

There are other programs we can't start because of this racial thing--we have this factor involved. These are some of the problems we face. As I told Dr. [B. Lamar] Johnson, if we didn't have such problems they wouldn't need me or Milo Johnson, but could hire a clerk as administrator.

Unidentified questioner: Dr. Lombardi, I'm not quite sure what you meant by saying the Registered Nurse is becoming a technician.

Dr. Lombardi: When I was president of City College and we started the RN program, I always had considered it a good thing for the college and we looked on it as a professional program. This was before the idea of separating the technician from the professional. But we discovered in the junior college that if the two-year program begins to take on aspects that approach the four-year program, we lose the two-year program.

Let me mention Technology of Paint Manufacture as an example. We tried to convince our Advisory Committee that the addition of a college chemistry course would kill the program--the students would feel that if they had to do Chemistry I and II, they might just as well go into a four-year program; and that is what happened. In the night sessions, we had no restrictions on the Paint Tech program, but took anybody who applied, even without a high school diploma. We had a large influx of students, and for 20 years we've had two instructors teaching four nights a week in the Technology of Paint Manufacture, whereas in the day classes the Advisory Committee insisted that we require Chemistry I and II and then Organic Chemistry, and our students went into four-year programs instead.

Ir's the same thing in Engineering--the Committee says they have to take Calculus. Well, the minute a student can understand Calculus, he says, "Why should I be a technician? I can understand Calculus and I'll go to UCLA and be a four-year Engineering major." This is a subtle problem that you only sense when you see what happens to your enrollment.

Unidentified questioner: Isn't this a problem in vertical mobility? I don't know how you can give them the basic courses in the first two years that would allow them to progress without forcing them to progress; but, you see, there is no terminal point.

Dr. Lombardi: Let's take Radiologic Technology as an example. When we started the course I said to the teacher, "Here's a profession for you to teach. I'll give you two years to make a go of it, but you must promise that you will not give any entry tests to applicants. You must create a first-semester program that will enable any student to apply." You see, we had this problem of racial minority students to cope with--we've had it for a long time. She said, "Fine. I think I can create a program in the first semester," and in the first semester we got over a hundred students, knowing all the time that we weren't going to keep the hundred because they were going to have to go into the hospital for clinical training, where we'd lose a good many of them. But out of that hundred, we got 30 graduates, which is a very good ratio.

Now, where did I get that idea? I got it from Secretarial Science. We never gave an entrance test to a Secretarial Science major, so we have 300 or 400 people taking Typing I, and then at the end you get 50 graduates as legal secretaries and 30 in medical, and so on. See? You get large numbers at the end that you can't get if you start establishing criteria at the beginning. Now, this is a two-year program and if you begin selecting at the beginning, you're creating enrollment for the University--which is all right--I don't object to that--but I'm interested in the two-year program and I don't want to invest in a two-year program merely to send students to the University.

[In response to a question] I haven't said there are no screenings. I said that as a result of experience, when I was at City College, I began saying I would not start a two-year program for which there were entry requirements and we started Dental Technician and Radiologic Technology and we let anybody who came on campus decide at the end of the semester whether or not this was for him. We are not acting as gods. I don't know of any test in these areas that really distinguishes the people who are going to go on from those who are not going to.

Dr. Henry B. Peters, Assistant Dean, School of Optometry, University of California, Berkeley

I am pleased to be here as a member of this group because I have a continuing interest in optometric manpower--in the development of Optometric Technicians and Technologists. I've served on a number of advisory groups at the University and in my professional associations regarding these problems.

I am particularly interested in the development of the techniques that are involved in your study, because we have some problems we are attacking in Berkeley that bear particularly on the problem of task analyis in our profession.

At Peralta College [in Oakland] I have been working particularly on the Optometric Assistant program, which fits into this same scheme. We've been doing this for several years so I may have some experience to contribute even if you don't select the Optometric Technician as one of the groups to be studied.

Certainly, there is a great need for development of curricula in this area because there are, to my knowledge, only three such programs in the entire United States. The need can be demonstrated by the simplest kind of statistics. I look forward to working with you on the project.

Joseph Traub, Consultant, Prosthetics-Orthotics, Social and Rehabilitation Services, U. S. Department of Health, Education, and Welfare

The Social and Rehabilitation Services, I guess, represent the "W" in "HEW." We've been reorganized within the last year, probably to bring to the social climate of the country a rehabilitation philosophy within the Department of Health, Education, and Welfare.

Within the Social and Rehabilitation Services there is a Division of Training, lodged in the Rehabilitation Services Administration. That particular agency has been involved for the past ten years or so in training at the professional level in the allied health professions--Physical Therapy, Occupational Therapy, etc., and Speech and Audiology and Prosthetics and Orthotics. For some time my particular specialty has been Prosthetics and Orthotics; it is what I like to call a developing allied health profession.

Dr. [Miles H.] Anderson, as already has been stated, has been a leader, and we think a world leader, in the development of curriculum and materials for prosthetics and orthotics and in the allied health professions generally. We are vitally interested in the expansion of our training programs to include junior college and even sub-professional levels in prosthetics and orthotics especially.

We now have two junior college programs in operation and are considering six more--training in prosthetics and orthotics as well as Aide programs in Physical and Occupational Therapy, and Speech and Audiology and the rest.

As far as concerns our interest in cooperating with this project, I think we probably were cooperating when we weren't aware of it, in that we supported a grant application from Dr. Anderson in the UCLA Division of Vocational Education just last March, for a Dental Instructor program for the allied health professions which should integrate quite well with the program we are considering now. So we're very pleased to be here and we'll do all we can to be of assistance.

Anthony Staros, Chairman, North American Sub-Committee, International Committee on Prosthetics, International Society for Rehabilitation of the Disabled

Even though I personally am not a prosthetist or an Orthotist--I am an engineer--I am happy to serve on this Committee to represent the occupation of Prosthetics or Orthotics from both the national and the international viewpoint. On both levels, the need for training and education is the same as with the other allied health occupations, with tremendous manpower shortages.

This summer the International Committee, with funding from the United Nations, held an international seminar in Copenhagen on the specific problem of international standards in the training of Prosthetists and Orthotists and the Prosthetic Technician who backs them up. Dr. Anderson is a member of the seminar group.

We were successful in Denmark in outlining some standards for training facilities and some standards for curricula based on the framework of job responsibilities for these two levels--that is, the Prosthetist-Orthotist, which is a more professional level nowadays than the Prosthetic Technician who backs up the work of the Prosthetist-Orthotist.

One of the recommendations of the conference was to set up in Denmark an International Training Center. Dr. Anderson, I assume, will be an active consultant to that training school, and this is how I think we propose to integrate the work of this project with the international need.

The need is particularly great in view of the rapid changes that are taking place in this field. Years ago, we had limb-makers and what-not--we've spoken of brace-makers--and now we're speaking of the Prosthetist and Orthotist, a much more professional person.

The Prosthetist has now entered the operating room; he works directly with the surgeon in many facilities and clinics for what we call immediate post-surgical prosthetics fitting. Although the announcement in today's paper of the electronic arm developed at MIT was, in my opinion, premature, it indicates where this field is going--electronics in artificial limbs.

There is a great need both here and abroad for the technician who backs up the Prosthetist--the craft-oriented person who has to perform the actual fabrication, as the Prosthetist and the Orthotist become more professional. We would like to make a plea to this group and its staff certainly to consider Prosthetics and Orthotics and its requirements for training and education. This could be one of the major areas undertaken, because these [instructional] packages would be useful not only in this country, but abroad as well, particularly in the International Training Center.

We look forward to rapid changes in this field in the next several years, which will change the whole balance between professional contributions and "credit" contributions, diminishing the stature of the latter. As these changes take place, therefore, we hope the project will consider how the instructional packages might be upgraded, and also give thought to developing advanced training packages for those who already have been trained.

Miss Ann Lewis, Consultant, Health Manpower Council, California State Department of Employment (observer)

By definition, the Council is concerned with all aspects of health manpower--that is, recruitment and training and utilization. We are deeply interested in this project, and we have a special interest because of the plan to use task analysis as the basis for experimental curricula. The Health Manpower Council has been doing this, using the system developed by the U. S. Department of Labor and working with UCLA in the medical field. So Dr. High is quite right--this is a very difficult thing to do.

The Department of Labor system of task analysis, in my opinion, is the best in the world, but it won't cope very well with the needs of the medical field. The analytical part is all right, but the evaluation part is something else.

We are conducting our own project at UCLA, using the Department of Labor system and new ways of evaluating what we want to achieve, to see if we can reorganize job and department, and streamline costs; so task analysis here is going to be of great interest to us.

The Health Manpower Council has been doing this same sort of thing with San Francisco State College. There, we are concerned with curriculum for only one course--Orthopaedic Assistant--by using job analysis. This seems pretty much the sort of thing that Dr. Anderson has going on, so this certainly matches our own interests.

The Staten Island project is something we have been watching with great interest. We've been keeping quiet about our own work because it has been so experimental and so flexible that we hated to risk having to confess six months later that we hadn't yet figured it out. You know, this can be a problem with experimental programs.

I'm delighted to be on the Board of this project at UCLA, where one department has been doing very well, and has added a novel twist to its analysis in that it amounts to training someone in the imminent aspects of job analysis that will be needed in that department. A program of this type already has been completed very successfully at the UCLA Medical Records Library.

I might comment that a Medical Records Librarian need not be concerned about how a carpenter does things--she has her own field. Now, in order to be a teacher, she'd have to know how to do a first-rate job analysis in that department, and this we have succeeded in doing. So this has been very exciting.

I don't want to say more now because we still have so much to finish. Nevertheless, we hope to stay closely in touch with Dr. Anderson and with the development of curriculum as it progresses--we're extremely interested.

R. W. Gerard, M.D., Dean, Graduate Division
University of California, Irvine

Irvine, like Davis, is a newcomer in this area. We have no past, but I hope we have a great future. There are a number of reasons why we may have something to contribute ultimately to this project, and certainly we're very much interested in this field.

Irvine is just assimilating an existing medical school, moving it from Los Angeles down to our campus at Irvine. In the course of this, we are making very major changes in both the organization and the curriculum of this school. We have an opportunity, which I hope we will not muff, of integrating the medical school more intimately than has often been the case with the entire range of campus activities and, I hope, with a wider health program.

Secondly, from our inception we have had a great commitment to computer-assisted learning and new educational technology in general, so we may have something to contribute to this phase of the study.

Thirdly, we are just engaging in attempting to make what I'd like to call a systems analysis of the health field. We have a committee established for this purpose; it's been in existence only a few weeks. This committee already has formed itself into three teams. One is looking at the problem of delivery of health care and (hopefully) not as it is being done now, but as it might be done in a quarter of a century, "if one had one's druthers," so to speak. We will look at the organizational aspects of health delivery, the personnel requirements and other resources involved, the technological ones particularly. I say we will do this--these are our plans and I'm pretty sure we'll go at least as far as making analyses of these.

A second team is concerned with looking at the present [health-related] educational programs in the various institutions, and we are taking as our area of interest Orange County as defined by The Regional Medical Program Area, which is a little larger than the County. This area [study] may be primarily a matter of finding out what each of these institutions is doing now, down to an examination for finding the answers, that may already have been obtained by others, on what the actual curricula are for these various subjects.

The third team will be concerned with an examination of what the real jobs are [in the health field] and therefore what each individual might be expected to know in order to do a specific job, and what the possibilities are of breaking down the existing specific courses and curricula. This is especially possible with computer-assisted instructional techniques, so that one could indeed have large core programs in which individuals of whatever kind of name are going along a common channel but branching off as it becomes necessary, or dropping out of the ongoing program whenever it is appropriate.

I'd like to remind you of our Chairman's comment that he hopes the Allied Health Professions Projects will be a smashing success. The word, smashing, pleased me very much because I suspect that if we really are going to be a success we're going to have to do a great deal of smashing. We're going to have to smash pigeon-holes of occupational names, of educational organization, or occupational tasks and, as General Wier and Dr. Lombardi separately emphasized, we're going to have to smash or get around the barriers of legal restrictions, certifications, restrictions of professional properties and jealousies and preconceptions and whatever else you want to add to the list.

I think it appropriate that a young institution like ours should be ready to at least take on the establishment and look at it from this somewhat revolutionary viewpoint. I think that what I can promise from Irvine is a fairly sophisticated theoretical analysis of what the problems are.

I cannot promise, but I would hope that we would be interested in cooperating with the Allied Health Professions Projects in some of the other areas--the computer-assisted and other instructional technology areas. Perhaps there would be the opportunity to use our campus and our relationship to the schools of Orange County as an experimental group in which some of these things could be tested.

William B. Steinberg, Director, Vocational Education San Diego Junior Colleges

I'm pleased and honored to be here representing Charles Patrick, President of our three junior colleges. For many years we have had the typical allied health occupational training programs, and naturally we welcome an opportunity to improve our offerings. We feel that participation in the Allied Health Professions Projects will enable us to gain new materials and new insights.

Particularly interesting, I think, is the fact that you are going to look at the total field. For instance, we already are being asked to add an Inhalation Therapy Technician program, and just recently we received a request to do something about an Environmental Health Technician training program. As Dr. Lombardi stated, it's very difficult to add these programs unless we are assured that there are ample job opportunities in these fields.

The idea of a core curriculum, a cluster curriculum, or something of the sort, is very important, because if we are to add all these new programs, certainly there must be some basic core that can be used in the junior college program.

I might explain that I have worked in vocational education for many years, but only recently moved into the junior college operation, and I am well aware of the problems that all of us face in urban areas, and specifically, the minority problem. I hope that this will be recognized in your program planning.

I want you to know that we are interested; we think what you are doing is important. The public is interested, too. On July 29th an article appeared in our local newspaper headed, "City College to Help Train Health Aides." This was the first I personally learned about this. We started getting calls about the article from all over. The various advisory committees for our health occupations programs wanted to know all about it. So I wrote at once to Miles Anderson to let him know the community is aware and interested.

Thomas O'Farrell, Associate Director, Hospital Continuing Education Project, Hospital Research and Education Trust, American Hospital Association

I'm representing the American Hospital Association in place of Mike Detmer, Director of the Bureau of Paramedical Education, who was formally designated a member of this Committee. I want to say that we at AHA are very pleased to be here and are very interested in this project. The association of hospitals of the Nation is naturally interested in the number of allied medical personnel and also the quality of these people. We already have touched upon the availability of clinical settings for instruction, about which I was concerned, so we can just skip that.

I'd like to take a moment to summarize the recommendations of a committee that acted this year on manpower and education for the Association. I believe that Dr. Rus Nelson, who is Administrator of Johns Hopkins Hospital, was chairman.

This committee recommended that the Association recognize a trend toward increasing the responsibility of educational institutions for education and training for the health occupations. It stated that the trend is proper and irreversible.

It recognized that in the acquisition of skills and knowledge for the health occupations, an essential part of the process must occur in a clinical setting. It recommended that the Association undertake a program to assist hospitals and schools operated by hospitals to improve their quality and to become ready for affiliation.

The report stated that the Association recognizes the primary responsibility of the hospital with respect to definition of the skills and understanding needed by hospital personnel trained in a variety of settings. It recommended that the Association increase its activities with educational institutions that help train personnel, from pre-service to the continuing education level.

I might add that the Association has many resources that it would be willing to share with this group at UCLA in developing the materials you plan to produce. We have liaison with all the state hospital associations. We have information and statistics on needs of various occupational groups, and we also have been in the materials development area ourselves, having developed materials under a grant from the Department of Labor in the areas of Housekeeping, Ward Clerk, Dietary Aides, and Nursing Aides. These are highly structured manuals not only for the student but also for the instructor. Built into them are some very sophisticated visual aids.

I notice on the listing you distributed the mention of some of the occupations in which we have worked, and I want to be sure that we don't get into some kind of duplication. I would welcome the visit of a Project representative to the Association at an early date, to look in more detail at what we have.

Ralph C. Kuhli, Director, Department of Allied Medical Professions and Services, Division of Medical Education, American Medical Association

I can assure you that the AMA is interested in providing all appropriate resources and services to the directors of the Allied Health Professions Projects, especially from three major areas of interest at the AMA. One of these is recruitment, which is conducted in the AMA by our Program Services Department. The second is health manpower--we have a new Council on Health Manpower which is staffed by Dr. Hudson's Division of Health Services and which would be specifically concerned with the functions of various health professions. The third is educational programs, which would be of special interest to our Division of Medical Education and the department I head--the Department of Allied Medical Professions and Services.

I'd like to say a few words on why the AMA is interested in participating in work like this, and how we're conducting our work--in other words, what we are trying to do. A century ago, medical practice consisted of a doctor and his patient, but there were services needed by the patient that didn't require as much education and experience as a physician has, and furthermore, the doctor needed help. So helping professions developed. I guess the specialty of nursing was the first of these, but they soon proliferated into a whole range of professions allied to medicine, until the list of allied health occupations has grown from dozens to hundreds.

Furthermore, today there are about 15 health workers for each patient. Perhaps the best health care for a patient is provided by a health team. Physicians are the first ones to say that allied health workers can do some jobs as well as or better than physicians, because they have had special training, special experience--a chance to develop expertise in these fields.

I would also emphasize that in staff work our top administrators call the allied health workers equal partners as members of the health team. By the way, we don't use the term, "sub-professional," in talking about these other people who work with physicians. I would also emphasize that the patient goes to the physician for diagnosis and determination of treatment, and the physician is responsible for his patients and refers them to allied health workers for some of these specialized services.

The physician needs to know that the allied health worker is adequately educated and trained to do his job properly. This is one of the main reasons why organized medicine works so diligently to help recruit the best possible young people to the health professions and to make sure that their educational programs do, in fact, develop the competence needed to do the specific tasks required. Of course the other professional associations concerned with these allied health professions are equally concerned that their professionals are appropriately educated for their jobs.

So the two interests of physicians are, first, they must be sure that the allied health workers are capable of doing their jobs, and second, they want to delegate more and more responsibility to these other allied health workers.

Educational standards in the United States are set and maintained by a carefully developed structure. At the end of World War II, you may remember, so many different agencies and organizations were telling college campuses what they ought to do and how they ought to do it, that a group of college presidents set up a National Commission on Accreditation, which has six regional organizations to give accreditations to campuses [in their respective regions]. The NCA was organized around 1950. Shortly thereafter, federal legislation was enacted requiring the United States Commission on Higher Education to publish a list of nationally recognized agencies and associations which it determined to be reliable authorities as to the quality of training offered by educational institutions. So in addition to the six regional associations which give an umbrella of accreditation to a college campus, there are some 20 professional associations which have been approved to grant specialized accreditation to professional programs of these institutions.

For example, both the voluntary National Commission on Accreditation and the official United States Office of Education have designated the American Dental Association for the dental fields, and the American Medical Association for a growing list of health professions starting, of course, with the medical schools.

Incidentally, I work as a member, to the extent that I have the competence, as a member of the Medical School Review Team. And this helps me learn how many things medical schools are doing to contribute to the education of allied health professions as well. Professional organizations collaborate with the AMA's Council on Medical Education for the approval of the curricula or programs of schools for Certified Laboratory Assistants, Cytotechnologists, Inhalation Therapy Technicians, Medical Record Librarians, Medical Technologists, Medical Record Technicians, Occupational Therapists, Physical Therapists, and X-Ray Technologists.

In addition, there is a lot of action--a development that we are getting on paper--on requirements for the educational programs of Radiation Therapy Technology, and Nuclear Medicine Technician and Technologists, Medical Assistant, and Orthopedic Assistant, and I guess we're getting started now on

Physician's Assistant. This work, I repeat emphatically, is done in close collaboration with a growing list of other professional associations--I have 14 listed here.

The policies of this work are guided by the AMA Council on Medical Education, consisting primarily of practicing physicians and medical educators, which has an Advisory Committee on Education for the Allied Health Professions and Services. Dr. [J. Warren] Perry across the room is a member of it. There are only five members on that advisory committee. Another member is John Porterfield, Director of the Joint Commission for the Accreditation of Hospitals; the chairman is Ed Pellegrino. We work closely not only with the Office of Education and NCA but also with such people as Fred Erickson, the acting director of the Division of Allied Health Manpower in the Bureau of Allied Health Manpower.

In conclusion, I would emphasize that the inherent strength of this operation is the cooperative participation of all these groups--each of us trying to do our respective parts in it, and that the reason why we're all doing this is to help the people who need an education for a health profession to get the kind of education that they need, and also to make sure that a doctor can in fact delegate more and more specific tasks to people who have been educated for the proficiencies they need to provide the necessary assistance. So that's the heart of the thing.

In closing, I might add the thought that it would be a good idea if each one of us, instead of trying to do everything, try to identify his own role--his component part--in the total operation, and concentrate on that--identify what we are and try to do the best we can in our roles.

In my experience in organizational work through the decades, I've found, especially with national organizations, that they try to be everything to everybody. We really should try to isolate our particular slice in the pie, concentrate on it, and rely on the others to do the same with their particular functions in the total operation. That's why, for instance, I've been in consultations with my cohorts in the American Hospital Association. The AMA wants to be the medical association; the AHA needs to be the hospital association. We need to work as partners, and that's the business in which we are engaged.

And as for you junior college people, I re-emphasize that the NCA blanket accreditation of colleges does not include what is necessary in these vexing health professions. To give you one quick example--and it may be a poor one because I'm a layman--when my blood is typed, what's most important is not merely that it be typed, but that it be typed correctly. You see, I don't want some lab worker to find that I'm pregnant.

Miss Mary Jensen, Associate Director for Nursing Occupations, Allied Health Professions Project

We've distributed what I might call a descriptive listing of the various occupations that might be included in our program,*and I want to say first of all that if you are wondering why your particular field of interest seems to have been dismissed with just a few words or without any description, it's just because it would have taken a real tome to do justice to all the occupations in the allied health fields. To give you a chance to record your own reactions, we have included in the blue portfolio a four-page piece of material** headed "Educational Program in the Allied Health Occupations," which we hope will help us determine priorities. We'd like to have you express your own opinions by ranking not only the major groupings, but also the occupations within the groups--that is, mark the six major groupings from one to six, to indicate your own opinion of relative importance. And if you wish to add some we have omitted, or have any other comments about areas in which we should be working, space is provided for these notations.

C. L. Roberts, Association of Rehabilitation Centers: This gives me a chance to raise a question I had wanted to raise ultimately. I would be concerned about the almost forced choice that may be involved here in indicating the existing professions without raising the issue as to whether they need this support, and I wonder if the project will address itself to this point. Under "Therapist and Rehabilitation Occupations," for example, we have the traditional P.T., O.T., and so on. What about the possibility of training Rehabilitation Aides who would combine a number of skills--a combination of P.T., O.T., and Recreation, for example. Is the project going to take a look at this, or will it concern itself strictly with developing training programs within the already established occupations?

Miss Jensen: We want to do not merely what already exists, but if something new is called for, to do it. You'll notice that some programs that require a baccalaureate degree are listed here, not because we intend to get involved in them, but partly for purposes of clarification, too--so we can see what is the province of the junior college and what lies outside that province, too. Your point about new combinations of functions for Assistants or Aides is certainly something that we would be dealing with.

Mr. Roberts: My concern is whether this project, in the four-year duration anticipated for it, can effectively address itself to this question.

Dr. Miles H. Anderson, Director, Allied Health Professions Projects: Absolutely. And I might add that this sort of survey or opinion poll is designed more to get the sense of the group--it isn't like voting for President. We're not going to feel that we're bound by the outcomes.

---

* Appendix B

** Appendix A

The Chairman: It's not irrevocable, in other words?

Dr. Anderson: That is right.

Unidentified speaker: How will you eventually determine which disciplines will be covered in the program?

Dr. Anderson: It will be based as far as possible on the sense of the group as expressed in this particular poll. In other words, if there is strong indication of a need in any or all of the major fields, we'll undertake them in the priority indicated. I think we'll get them all, sooner or later, but this will give us a starting point.

(At this point, the meeting briefly went "off the record.")

Unidentified speaker: As I understand it, the packages that are developed locally would be available to anyone in the United States and, as Mr. Staros mentioned, in foreign countries, and they would be usable in whatever locality with proper major or minor adjustments to local need, but would in the main answer the bulk of their needs. This is a goal, isn't it, Dr. High?

Dr. High: As I see it, the goal output of the project would be these validated instructional systems, which with appropriate modification could be used in any institution that has the need for this kind of thing.

Dr. Peters: Isn't it true that you would develop the technique, which is not necessarily the task? It would seem to be more important to develop a representative set of programs that would show how a thing could be done, and a variety of areas that could possibly be expanded by others into some of these other areas. . .

Unidentified speaker: Wouldn't it be both? The technique and the material as well? I don't see them as mutually exclusive.

Dr. High: I mentioned this morning the objective of developing some sort of cross sections of broad occupational areas, and the idea of a broad representative sample should give us some experience in each of these broad areas.

Dr. Anderson: For example--what we'd like to get is some idea of which optical groups we tackle first.

Dr. Matkin: I find myself on the horns of a dilemma here. Number 1, I do not have the expertise or knowledge to make any determination in laboratory and X-ray occupations, and therefore I would consider it presumptuous for me to mark any item in these areas. On the other hand, I find myself the only representative of dentistry here, and I'd like to know what my one vote will do for priorities for the allied dental occupations.

Dr. Anderson: I think the important thing is the grouping of occupations into families. Also, we want to get a sense of "how well does this service or administrative group fit into the picture."

Let me explain that for the initial round, we plan to get six Associate Directors. We have Mary Jensen already, for the nursing occupations, so she is ready to go. The point is, in whatever areas we select, what do we hit first and hardest, and then what next, and then what next? We also must arrive at some idea of how to compare the relative weights of some of these groupings, one to the other; but I think that your rating of the dental group, Dr. Matkin, would carry a lot of weight.

The Chairman: If it isn't out of line for me to do so, I might suggest that some brief essay presentation of the intensity of need as you see it, might be added to your own priority-sheet, because that automatically weights it and gives it some statistical validation.

Dr. Perry: I think that would be extremely important in some of the areas where we know considerable work has been done. I'm thinking specifically of Occupational Therapy Assistant. This program has had some national impact on the headquarters offices of at least four or five institutions that are already involved--it's a program with criteria already set up. The question is, how high a priority can you give a program when you already have something to turn to in relation to it?

The Chairman: There, I think, you would still show the urgency of the situation, but you also would show that other work is being done in the field, so that we could avoid duplication.

Miss Jensen: Then we may go to those established programs and draw from them?

Dr. Perry: Yes, but add the innovative things that determine the teaching techniques they do not have.

Dr. Anderson: That is exactly the plan.

Dr. Klopsteg: As I look over the list I feel utterly incompetent to vote for anything with any assurance that my vote was significant. I wonder whether after all of us have got through voting, if we don't have a result which statistically is completely without relevance.

Dr. Anderson: If you feel that way, Paul, the thing to do is indicate your sentiment in the space allotted to comments and pass it in that way, and it will be perfectly acceptable.

Dr. B. Lamar Johnson: I feel exactly the same way and I've simply written a note on this form saying that my background does not permit me to comment insightfully on the list of occupations. It seems to me that some of the other points raised could be covered if each of us signed his form. Then it would be possible to know that the single representative of a given discipline present here expressed himself only with respect to his own field.

Unidentified speaker: I think each vote ought to be accompanied by essay-type comment.

The Chairman: Any form such as this suffers by brevity, but we can expand it more easily than we could have condensed it.

Unidentified speaker: One of the problems here is that you're offering these different study criteria, and it might imply a comparability between them which is not such as to permit your coming up with a final answer on the basis of what the committee says. What we are giving you is something off the top of our heads, something which we personally feel is more important, although this may not really be the case.

If we're going to package some programs that can be used all over the country, it seems to me that we'd want to package programs that are not duplicating others, as would be the case with the therapy programs mentioned. Some kind of study needs to be made to determine which occupations have the greatest need for this kind of packaging.

Dr. Anderson: That is the first step. We're going to do exactly what you suggest. Mary Jensen has already started doing it with nursing; and we'll do it with all the other fields. Miss Cromwell, president of the O.T.'s, already has been in the office and discussed this with us. In other words, the kind of base on which we'll start is what they already have -- and if areas which already have programs under way want to go ahead into more sophisticated approaches, we'll work with them, just as we'll work with those starting at the bottom level.

Unidentified speaker: Some professions would just love to get into a training program to learn how to do this task analysis business. They don't have the skill, whether it comes out of the occupational field or not, and they've been fumbling with their task role on this particular level of education.

Dr. Anderson: Do you know some of these?

Speaker: Well, I think we can find out some of them -- make some inquiries. This is where our resources would come in. But for me, this is the crux of the whole thing.

Dr. Goldsmith: I've heard the term statistical validity coming up in relation to this little poll. Can we put your minds at rest by saying we are not looking for statistical validation? What we are trying to do is get the sense of the Committee. This is most important. Then we can start ruling out these programs where sufficient work has been done -- we can work from what you feel is important in general.

The Chairman: Is it fair to say that there will be communication back and forth, so that these guidelines will not be chiseled in granite, and people should relax a little about this form? We are just trying to get information. We're not trying to get more information than we can get at this moment. Your reaction is good because it means that when you say something you really mean it.

Dr. Gerard: Would it be possible for each of us to have a duplicate copy of this for our own use? The mere organization of what you have done is already a considerable contribution to structuring the project.

Dr. Anderson: I don't know how many spare copies we have now, but we'll ask Amber to run more through the xerox so you'll all have copies to take home.

Miss Jensen: I think we should say that for each of the major occupational areas chosen, there will be an Occupational or Technical Advisory Committee to guide us in the selection and investigation of programs which ought to be studied; and of course the other thing is that as we go around and see institutions that have programs we've been asking them what they are doing so we can draw on what they've done in their programs and then use this to add to our background in preparation for the task analysis, because there are many institutions that may have programs in some of the therapies or nursing, but perhaps they haven't gotten around to doing some of this task analysis and development of objectives which are such a key to the development of any audiovisual or instructional material.

Now, if we can draw on what they've done, and perhaps improve or even help them in their further development of these, I think an objective that will come out of our work.

As I indicated, the very brief survey you have is not meant to describe the total programs -- we don't even have a description under some of them; but where there was a question as to what a term meant or where there were some specific problems with regard to instituting the program in a laboratory technology -- there are many rules and regulations which perhaps would limit the institution or the investigation of a program.

Dr. High talked with us the other day about the Biomedical Engineering Technician, indicating to us that a large group of people already have begun to investigate and to do much the same thing that we are trying to do. This is a highly specified, specific area and perhaps this is something we wouldn't get into. Of course this is not a complete summary -- more and more new occupations are being invented almost every day and changes are being made all the time, too, and this is perhaps just a bit of a guideline to show you where programs are, a little about their length, and so on.

Clyde Lindley: I have one question about the summary (which, incidentally, I think it excellent.) I notice it includes some occupations that apparently require only on-the-job training, and I wondered why you included these because my understanding was that this program is interested in the development of curricula for groups of more or less related occupations.

Dr. Anderson: I would answer that by saying that we felt that our mandate from the U. S. Office of Education includes anything in the area of occupational preparation, up to and including the junior college level. So that, as you mentioned earlier, would include in-service or on-the-job training programs; it would include even high school programs such as, perhaps, this investigation now going on at Compton Union High School District.

Unidentified questioner: May I clarify this by asking another question? Would the program be developing course content or practical content for on-the-job training?

Dr. Anderson: It could very well be doing both.

Questioner (Dr. Gerard?): I had been impressed earlier in the meeting by the fact that for us to be of any value to you, we would all have to have a common criterion for selection of occupations that were important; and one thing that I put down was that we should exclude are those occupations for which training could be provided in the on-the-job training area. I thought that this is one that you could exclude immediately, but maybe this is not the case.

Dr. Anderson: Well, since I have had a very strong interest over a period of years in on-the-job training, I should hate to see it excluded. I think it is extremely important.

Dr. Gerard: I think it is very important -- don't misunderstand me -- but I was trying to get at the purposes for your objectives, your overall goals here.

Dr. Anderson: Well, I think that the whole gamut, up to and including the junior college, should be included in our thinking; and that we should not exclude those that might appear to require only on-the-job training--they might or might not need help.

Unidentified speaker: A lot of the on-the-job training will be in the hospital--hospital-based training, won't it?

Dr. Anderson: Right. We call it clinical instruction, and I think it very important for us to give it thought.

Mr. Roberts: I'm a little concerned that we seem to be equating the junior college with the community college with two-year associate degree programs. This is not my understanding of what the community college interprets as its own role. All of those things that you describe would be within the realm of the community college.

Dr. Anderson: Would Dr. Johnson agree with this?

Dr. B. Lamar Johnson: Yes, we have both short-term and long-term programs.

Miss Jensen: The other observation that I make is where these on-the-job occupations are indicated. There is a move even with some of the on-the-job training programs, such as the Nurse's Aide. I was down at Trade Tech and they're having a six-month course for Nurses' Aides. This is true in many of the colleges. These programs--and I mention this to try to relieve some of these fears--all of these programs are including a great deal of clinical experience. They are merely under the wing of the college because, I think, it seems to go along with some of the thinking--that there is a trend toward putting programs into the educational institutions, not to remove the clinical experience, because this is a very important part of these programs; but there are more and more very short-term programs in the junior college.

Dr. Anderson: Our Chairman has just asked whether we will keep you informed of reports that we receive or develop and contacts we make, materials we gather, and so forth. We most certainly will do this. We feel that this is the master group to whom we are looking for literally national guidance in the overall policy point of view; and we want to keep you informed.

We don't anticipate that we're going to be able to meet, say, every three months or anything of that sort, but we (hopefully) could get together, say, this time next year and review the reports that have been issued and the progress (hopefully) that has been made. In the meanwhile, we will keep you informed as to what we're doing by sending you copies of all the reports--the same ones that we will send to Dr. High I think will be appropriate for us to send to members of the Committee. That will let you know what is going on, and then you can respond and comment and tell us that you think we're not doing what you thought we said we were going to do when we were here today.

I hope we could keep up a--what's Chancellor Murphy's favorite word?--a dialogue between ourselves, so that we could keep you informed as to what's going on, and I hope this wouldn't be a one-way street. I think it very important that as new things turn up of which you are aware, you let us know about them. Is that fair enough?

The Chairman: I want to underscore that. What I was getting at, and you said it well, but I just want to reiterate--the information that is gathered by this group in its search to discover what is going on so that it doesn't duplicate, or so that is supports what is being done, probably is going to be of great interest to all of the Committee members here. This is part of what will be abstracted or as necessary communicated to you, because I think this is one of the functions of the program. It's like a master clearing house--a sophisticated clearing house of information. At least, that is what I would see as one of its benefits, even on an interim basis. Any comments, or any disagreements with that idea? Now, Mary [Jensen], what do you want them to do right now?

Miss Jensen: I think what we really want and need is your comments. If you don't feel you can comment, please indicate as such. If you want to do a ranking, if in the reading or the studying that you've been doing you come up with some ideas of the greatest areas of need, feel free to do so. Work on it and some time before you leave today turn it in. And I think the suggestion to put your name on it is a very good one.

Dr. B. Lamar Johnson: The new remarks I want to make come under three headings. One is a rejoinder to Dr. Lombardi; the second is a few comments on the systems approach to instruction; and the third is some brief comments on a national survey of innovative developments in junior college instruction on which I have been working during the past 18 months.

First, a rejoinder to John Lombardi; and really, it isn't a rejoinder, because I don't think it suggests a disagreement. I was about to comment at the conclusion of his remarks this morning by sketching a little diagram. It's interesting that we've gone through most of the day without using this sketch pad. Now, I'm going to show you a little diagram. Nobody has ever accused me of being able to draw, but a mechanically minded colleague helped me get this out during our luncheon break.

This is a diagram I borrowed from Clifford Erickson, the newly appointed Chancellor at the College of San Mateo in California. This first part up here represents the usual college and university. Before the student is admitted he goes through a battery of tests and requirements and screening processes to decide whether he can get into the door.

In the open-door college, on the contrary, the student goes through no such battery of screening devices; he goes in the door and after getting into the school he undergoes a process of screening and guidance and counseling to help direct him to courses and programs that are appropriate to him.

Now this, John [Lombardi], is in no sense a disagreement with the viewpoint you were expressing, but I think it does suggest that within the open-door college, we do not imply that all students can take all programs. There will be screening for a good many of the programs, and certainly screening in the types of programs we are discussing today.

Second, some brief comments on systems approaches to instruction. Two years ago this summer we had a national conference on systems approaches to instruction in the open-door college. Participating in the program at that time were representatives of several institutions represented here in this room. As I thought of the topic assigned to me in the agenda, it seemed that anything I might have to say will be largely redundant because it appears to me that the rationale of this study--and I've studied your proposal and have listened to the discussion today--includes a systems commitment to the curriculum and instruction. I'd just like very briefly, if I may, to suggest of a few of the points that seem to me to be important--points that you have included in your plans and projections.

The first thing, of course, is the need to identify our objectives--behavioral performance objectives, if you will--

and you put a great deal of emphasis on that as you refer to task analysis. This is the first undertaking to which you're addressing yourselves following the selection of fields in which you're going to work.

The second is to provide learning experiences designed to lead to the achievement of those outcomes. This, we've given attention in the proposal and in our discussions today, and it has been alluded to more than once. I'm pleased to hear this--your intention to use multi-media approaches to instruction.

Listening to the discussion of the last 20 minutes, I was reminded of the catch-phrase, "Don't fence me in". I think the answers the staff would give to some of those either/or questions some of us were asking would be, "It isn't either/or; it's both/and".

Now I'm feeling much about the rationale of this study in terms of approaches to instruction. You're saying, "Don't fence me in with on-the-job instruction; don't fence me in with lectures; don't fence me in with clinical experience, audio-visual, and so on." [You are planning in terms of] the whole gamut of experiences, learning experiences, on the basis of those best suited to achieve the behavioral outcomes that are identified.

The third step is one to which we have given less attention up to the present, but I think it is inherent in all of our thinking. It is the identification of effectiveness--evaluation--on the basis of the extent to which the behavioral outcomes have been achieved, and from where. Important in this systems approach is a feedback to the learner; and the sooner that feedback occurs, the better. The feedback, however, must not be limited to the learner; it also is essential to the staff member of the study group, the instructor, and so on. The evaluation should be based on achievement of behavioral objectives, with feedback to the learner, and feedback from the learner to the leader of learning; and then, fourth, there would be revision of the learning experiences and learning materials on the basis of the appraisal and the evaluation. And again we would go through the cycle.

Now, if I understand Miles [Anderson] and Mel [Barlow], this is the rationale of the proposal you have made--a proposal that has been accepted and funded. It seems to me that this is the rationale of the entire discussion we've had here today; and really this is what I have to say in response to the topic on which you have asked me to speak: simply, I hope to underline and put in some exclamation points with reference to the new approach that you're making.

I want to congratulate you and the project on having Mary Jensen on the staff. Miss Jensen is not only a nationally recognized nursing educator; she also has been right on the firing line in establishing a program in the field of nursing which is based on a systems approach to instruction--audio-tutorial teaching. I first met her in the weeks before the opening of Oakland Community College [Michigan] where she had the responsibility for launching the nursing program which, as most of us know, has achieved a good deal of national recognition. I'm sure that her participation and leadership will add exclamation points to the rationale that you develop.

Last, I want to comment briefly on the fact that I've been working for the last 18 months, under the assistance of a grant from the ESSO Foundation, on a national survey of the innovative developments in junior college teaching. This survey has taken me to junior colleges in 22 States and has involved participation in one way or another with more than four out of ten of the public junior colleges in the country. I've just finished the manuscript of the book in which I'm reporting this study.

I do want to comment on one point that up to this time I have found missing in our discussion and in the proposal; and I don't think we should expect to find it now, but I hope we may keep it in mind. As I travel around and study new developments in junior college teaching, I find a great deal of emphasis on and recognition of the importance of individualization in teaching. I would say that the most talked-about new development in junior college teaching today is audio-tutorial teaching. I say it's the most talked-about, but I don't say it is the most widely supported, or the most used. I say it is the most discussed.

Sometimes I may say it skeptically, but I would further say that I feel that the people at Oakland [Michigan] Junior College, Professor Postelthwait at Purdue, the people at Golden West, the folks at Mt. San Jacinto, and others who are working on audio-tutorial teaching, regardless of what evaluation ultimately may show, have made one of the finest contributions to junior college teaching made in recent decades, because they are leading us to an analysis of instruction and they are causing us to argue and discuss and sometimes cuss about instruction, and pushing us back to some pretty serious thinking. I've been much pleased to find discussions and beginning use of audio-tutorial teaching in junior colleges all over the country.

But audio-tutorial instruction is not going to the ultimate of individual utilization. Within the audio-tutorial plan as it is typically used, a given student may complete, let us say, a week's assignment at any time during that week.

That is, he may go to the individual study laboratory, he may work individually, and perhaps on Monday he may complete his week's assignment. Typically, however, it is not possible for him then to go on and do the second week's assignment, and then the third week's. There still is the retention of this kind of lockstep in much of audio-tutorial teaching.

I'd like to consider this point--"Don't fence him in,"--the hope that this project will lead a thrust toward an individualization in teaching in which it will be possible for students not to be re-subjected to learning what they already know, not to being held back if they're ready to move ahead, and also not to be subjected to failure just because they're not ready to go on when somebody else is. And I want to tell you about two examples of hopeful developments in this field.

I was pleased today to hear Dean Gerard refer to computer-assisted instruction and the leadership that is being given at his university in this field. I know that some of the junior colleges are working with the Allied Health Professions Projects and are looking to you for leadership in this field; and from where I sit this offers one significant and useful approach in a number of fields to the individualization of which I am talking.

I notice that Milo Johnson [President of Mt. San Jacinto College] is here. In February of this year, on the opening day of the Spring semester, I visited a class in typing on the campus of Mt. San Jacinto College. This school has an instructor who is using a programmed approach to the teaching of shorthand and typewriting which makes possible a highly individualized course under which a student can complete a given course in, say, six weeks, whereas another student may take two or three semesters to complete that same course.

As I walked into this classroom, I saw some 30 students seated at typewriters, each having beside him a tape recorder playing back programmed directions in terms of a workbook. I was told that some of these students were working on the first lesson in the typewriting course, some were working at the mid-semester point of the course, and some of them were about to complete it. It appeared to me that this was one of the few examples I had seen of moving toward individualization in terms of rate of progress in learning, and I am hoping that out of this project, Miles [Anderson] and Mel [Barlow], may come some notable contributions to this whole matter of individualization. Let's take the viewpoint of "don't fence me in."

I am under the impression that the programs in nursing, developed as they have been on the basis of task analysis and science curricula design, have had very important results on instruction in other fields in the junior college. I am hoping that this project will have profoundly important results, not only in the field of paramedical education, but all across the curriculum of the junior college. This, I think, is the challenge that faces this group, and after being here today, I am expecting us to achieve it.

Dr. Gerard: I am delighted with this exposition. When I used the term, computer-aided learning or computer-aided instruction, this is exactly what we're headed for. I hear talk of its going on in junior colleges -- Fullerton, Orange Coast, and others -- and am expressing appreciation of this attitude and leadership that you're giving and taking.

Bernard Strohm, Coordinator, Allied Health Professions, UCLA Hospitals and Clinics

As coordinator of the UCLA hospital-based training programs we're concerned essentially with two areas of these -- certificate-awarding programs and on-the-job training programs. When we talk about certificate training programs, we really are talking about the graduate student in many areas, the undergraduate, the AA student.

The teaching hospital at UCLA, which will become a thousand-bed complement in another year or year and a half, is deeply interested in training programs. The Chancellor -- Chancellor Murphy, and now the present chancellor, Chancellor Young -- has directed Dr. Lamson, who is directly responsible to the Chancellor, to develop training programs in a very broad collaborative sense at the state colleges and junior colleges, and certainly training programs that are intrinsic to the hospitals and clinics themselves.

At present, we have four such programs -- three under the UCLA Hospitals and Clinics and one under the School of Medicine. These are certificate programs -- one is Medical Technology, which under California State law requires a baccalaureate degree before admission; another is the Inhalation Therapy training program which recently became a collaborative program with Santa Monica City College. Students will enroll at SMCC for one year and then come to us for their training for the full second year, after which they will receive a certificate from the Hospital and an AA degree from SMCC.

Another of these programs is on Radiologic Technology or X-Ray Technology. This is a true certificate program. The one thing that hangs me up about this program is that an AA degree is required for admission and the program is of two years' duration, adding up to a full four years of training without the awarding of a baccalaureate degree. I wish it were a baccalaureate program in that regard.

Then there is the program in Prosthetics-Orthotics, under the School of Medicine, Division of Orthopedics. This is a ten-month certification program. Most entering students have either the baccalaureate degree or the AA degree minimally, and we in turn do award them at the end of that time a Certificate of Completion through Medical Extension or Continued Education. This is the type of certificate training program in which we are involved at present -- it's not a high-powered situation, and actually there are very few programs.

But we are involved extensively with what we call clerkship-training programs in which persons working in various specialties -- in Physical Therapy, Occupational Therapy, and other areas -- are coming to us for intensified training and instruction -- eight-hour-a-day instruction. These are courses that because of physical plant and equipment and patient needs cannot be taught in a state college or a junior college setting. This, we call clerkship instruction, and there are several programs of this type that I will not enumerate now. The most recent was one in Physical Therapy, approved for San Fernando Valley College.

But more extensive than these two general areas are the training programs under the classification of internship training. At present we have at least seven universities involved with using a large clinical training center as an internship type of training center. These people are awarded certificates after anywhere from three to ten months of training. Occupational Therapists can come to us for ten months; the Physical Therapist for three and/or six months, depending on the university sending him. This is the kind of training in which we are involved at present -- internship instruction, really learning by doing -- it's on-the-job training as we define it; it is not instructional in the classroom or didactic sense.

The interests of the Chancellor in this general area, and I speak for him at this time, are not at present moving toward an academic structured program similar to the one emphasized by Dr. Perry -- we are not moving toward a School of the Allied Health Professions here at UCLA. In time, we may. I think, however, that our experiences with nursing and a few other areas at UCLA have had -- not a depressing effect, perhaps -- but they've made some members of the administration more realistic with regard to taking this new proposal to the Academic Senate. I am interested in developing an allied health program in time, perhaps, but here and now we will work as we are working, extending the University Hospital-based training programs through the State and junior colleges. I think it more realistic in our institution at this particular time. Have any of you questions about the type of thing we're doing?

Mr. Kulhi: Don't you feel a compulsion to equate or figure that nursing and the allied health professions are comparable, or that one might serve as a precedent or example for the other? Or, to put it more bluntly and answer my own question, please don't hobble your efforts in the allied health professions by any precedent in nursing.

Mr. Strohm: No, I don't think we will.

Unidentified speaker: I think what Strohm is referring to is the academic group's not being willing to accept these things; and if nursing is in trouble, I assure you the allied health group would be in vastly greater trouble.

Dr. Perry: It takes [place] in a setting, and I am not speaking of just my own setting, but those universities that move in this direction -- a great deal of willingness on the part of administrative staff right down into the community, to create the school with a deanship and such, for the allied health programs. It is not an easy thing to do, as Barney [Strohm] knows. It often takes time.

At the same time I would say -- and now representing our Association of Schools -- that this is not the only way to do it. Certainly much can be done in allied health programs as they relate to medical specialties and the like. A great deal can be done without putting them together [into a separate school]. There are major advantages in core curricula and things that can be done -- a great advantage in bringing the students together in core courses, where they really learn working together even before they get into the clinic. But I don't think it is the only way that it needs to be done. I am confident that a great deal will be achieved without going into this kind of experience.

Dr. B. Lamar Johnson: I wonder if the discussion of the last few minutes doesn't suggest the wisdom of the assertion made repeatedly today -- that this particular program on which we are working today is directed particularly and especially to the community junior colleges. I would say the comments of the last few minutes perhaps give ample justification for that decision.

Unidentified speaker: I don't wish to argue, but I trust we can look with the focus of the junior college, as you say -- which also means toward the total educational machinery, because they should interact.

Dr. Perry: It is true also that many community colleges also are putting together these programs in administrative organization. We have at least two associate deans in the State University [of New York] system who are deans of allied health in community colleges, with the whole responsibility for implementation in relation to the University.

Clyde Lindley: I'd like to make a comment relating to task analysis, which again is related to this problem of what occupational areas are selected for study. The task analysis approach will, of course, study occupations as they exist now and are performed now. I think all of us working in this area know of many tasks that people in the professional groups perform now that could be done by someone else who is not trained at such a high level.

I think one thing of which we must be constantly aware is that we shouldn't overtrain individuals for occupations. We should train them to that point which is necessary to do the job they have to do, and no more. I know there is quite a tendency now to get on the college bandwagon and develop college requirements -- junior college requirements -- for jobs that might be better handled in on-the-job training programs, and I think this is a very important consideration.

Mr. Strohm: I think this is an important point from my own standpoint: at UCLA, next week we begin on-the-job training programs for eight categories -- Custodial, Nurse's Aide, Dietary Assistants and Aides, Medical Record Clerks, Laundry Worker Assistants, and this type of category. One of the questions that came up was whether we should require a basic educational component beyond high school for admission to these training programs.

Mr. Lindley: That raises a very good question. I think we can ask now if there really is a common core that exists for some of these occupations. I know it sounds good to say so, but this again is related to your task analysis study, and what the inter-relationships are. Certainly all of us would agree that people have to learn to work together, but perhaps they will learn better in the actual working situation than in any course content and clinical situation; but I think you can address yourself to that question. I am a little bit worried about some of the groupings [shown on this list] and I don't know how you put these occupations under certain groupings because some of them don't seem to fit into these categories.

For example, under the heading of business, clerical and records occupations you have placed Pharmacy Assistant, Medical Illustrator, Dietitian Aide, Food Service Technician, and so on; maybe this is just playing on words, but they don't seem to be related to the business, clerical, and records occupations.

Dr. Anderson: That was done largely for administrative expediency. Most of these are people who work for the hospital administrator or do clerical work. For instance, the Pharmacist's Aide doesn't fill prescriptions -- his is a stock clerk type of job; the others are more or less employed by the hospital administration, and so rather than try to build up seven or eight more categories we just lumped them all together in this. The heading could have been "Miscellaneous," I guess, and it would have served the purpose just as well.

Before we go to work on that same problem of pigeonholing the different occupations, I might remark that it would be like writing up the minutes of this meeting -- thank heaven somebody else is doing it because nobody can do it the way it needs to be done. It's just one of those impossible jobs at which we do the best we can, and then deal with the hecklers.

Mr. Lindley: Another area is Speech and Hearing Therapy Assistant [grouped under Therapist and Rehab.] This is a rather technical and highly specialized occupation in itself. Of course there is a relationship in the emphasis on rehabilitation, but the techniques and procedures and tasks are, I think, quite different to some extent. I don't know enough about the other occupations to make any observations about them.

Dr. Lombardi: [to Mr. Strohm] I'd like to know whether this program at UCLA is an educational program, or just something that you are doing.

Mr. Strohm: Well, it is not educational in the sense that there is academic work involved. The credit is given by the junior college or the State College -- course credit is actually awarded by the college in which the trainee is enrolled. I think there is a total of 30 semester units available.

Dr. Anderson: I'd like to take a few minutes to explain a grouping that comes under a separate grant from the program that is our main topic of discussion. This was mentioned by Mr. Traub when he was giving his rundown on the Social and Rehabilitation Services [of HEW]. They have funded this particular program, which is identified as the UCLA Clinical Instructor Training Project. Its purpose is to provide a modest teacher training or educational program, ten hours in length. Its objective is to train on-the-job instructors, which, of course, ties right in with the problems of on-the-job instruction. Those of you who have undergone on-the-job instruction know that often as not it is a hit-or-miss type of thing, but largely just work experience, unless someone has taken the trouble to organize it, and unless the person responsible for teaching on-the-job has been at least acquainted with some of the fundamentals of how to go about instructing on-the-job as a technique that can be taught. It doesn't take very long, and we worked out this little ten-hour program for ten people, or 12 hours for 12 to 14 people, which does the trick fairly well.

It is described in this little yellow leaflet that we've passed out, and it is aimed primarily at the people who are responsible for training in the clinic, right where the action is going on, and right where the supervisor who is doing this teaching is responsible for many other duties besides this on-the-job teaching; he may be in charge of the whole department, and may have patients to take care of, and other responsibilities, and teaching is just one part of his total responsibilities. So they won't take a great deal of time to prepare for this particular chore. You've got to work out a means whereby they can do it very quickly and easily. They will not make and are not asked to make elaborate lengthy lesson plans; we teach them a brief method of making,for teaching purposes,a breakdown of the task they are going to teach, and how to get ready to teach. This little yellow card that we've passed out to you is given to them at the end of the first session. It pretty much sums up the very brief fundamentals of the techniques of teaching that we try to get across to them in this short time. In essence, that is its purpose. The people with whom we do most of this work are those who are responsible for the clinical or intern training of the Occupational or Physical Therapist when these people get out of school -- then they go to a hospital for an intern-practice period which may vary from six or nine months to a year. The people responsible for teaching them at the hospital use this technique.

Frankly, I developed it from my experience in World War II, when I was in charge of training for an industry program in Northern California. This was the old job-instructor type of training -- a job methods and relations training program. The program I have just described to you is a re-write adapted to the needs of the allied health professions. Instead of talking about production of iron castings, we talk about service to patients. Phraseology and content have been changed, but the principles are exactly the same -- there is no difference in the fundamental approach or thrust of the program.

I developed this five years ago down at Los Angeles

County General Hospital and at a branch of the Los Angeles County Hospital system at Rancho Los Amigos, and have been doing it at various other places since, to work out the rough spots, so this is thrown in as a means whereby on-the-job instruction can be made more efficient. You can train more people in less time, and train them better, through a systematic approach to on-the-job instruction. If there are any questions I'll be glad to answer them. I think this program is very simple and straight-forward and it is helpful in situations where the problem of on-the-job training arises.

Unidentified questioner: Is there a course outline?

Dr. Anderson: Yes, I have a trainer's manual.

Unidentified speaker: Miles, I'm going to add that one of the neglected ingredients in all allied health education is the pedagogical ingredient. Allied health workers tend to teach. They teach patients; they teach the families of patients. Education is one of the facets of the allied health worker's job, and it is part of his job to be an effective educator.

The Medical Records Librarian tutors physicians in how to get work on the medical records. The nurse teaches patients and the families of patients, and so on, all down the line. They all are educators in part. And whatever educational techniques they can learn and use, make them all the more effective as allied health workers.

Dr. Anderson: I wasn't going to mention this, but now that you have brought it up I don't want to leave it dangling. One of the Physical Therapists at Rancho Los Amigos turned out to be an unusually adept person. I gave her the materials and she became a trainer. By now, she has trained about 275 persons in how to instruct, including all the P.T. interns who were going through. For the very reason that you mention, she made the point that to teach the families to teach the patients, you had to teach one another, so "why not teach them all?" So Addie Atkins, which is the name of this person, has trained everyone who comes through in this ten-hour course. She has shown me some letters she has received from her trainees, saying, in effect, "I never did like teaching before, but now that I have taken your quick how-to-do-it course, I just love to teach. I can think my way through teaching problems and it makes it much simpler for me, and now I enjoy it." So your point is very well taken -- it's not just to train new workers, but it is to help these people to train the patients themselves, their family members, and of course one another.

Mr. Roberts: I'd like to voice an unsolicited testimonial relative to the clinical instructor program about which we have heard briefly. I want to commend UCLA for proposing it, and the Social and Rehabilitation Services for funding it. I predict that it will be one of the more meaningful and useful projects that they ever have funded. I wish it had been available about three years ago, when the Association of Rehabilitation Centers first began to develop its on-the-job training program. Certainly, we'll take full advantage of it in the future.

Dr. Milo P. Johnson, Superintendent and President, Mt. San Jacinto College: [Dr. Johnson's presentation was illustrated by the use of film strips, largely developed at his college]

Because we're a new school with a new campus and a tight budget, I'm starting by showing a few slides of Mt. San Jacinto. Dave Allen, who could not be with us today, insisted I start off by showing what we have to work with--he said, "After they've seen your location and your general setup, they'll realize that if you can do it, anybody can."

So here's about one-third of our campus. Up there in the clouds is Mt. San Jacinto--I took the picture right after a rainstorm last spring. We have snow on the peak about half the year. Now, I'm going to present some aspects of the multi-media program that we're using at Mt. San Jacinto College.

I want to explain that we're neither the instigator of this nor its sole developer--we've just put an awful lot of time into it and have taken ideas from a great many places in utilization of this type of instructional program.

Students coming into our library, if they are going to work with one of our programmed lessons, identify the lesson and get a film strip, an audio tape and a worksheet--these are the basic elements of the lesson. They then go into a student carrel, insert the audio tape into a typical playback device and the film strip into a projector, and they work at this individual study booth or carrel. This slide shows a bank of these--we have 100 of them in the library and also utilize them in other locations as well.

The worksheet is basically the backbone of the multi-media system as we use it. The worksheet provides an opportunity for the student to demonstrate that he has learned what was just taught in the previous portion of the lesson. We set a rough guideline for instructors who prepare these materials so that they try to get some reaction from the students every three to four minutes. The frame in the filmstrip changes about every 30 seconds.

Although I showed you the campus, it doesn't indicate how pressing our need for space is; our real problems in obtaining capital funds. So when Chrysler moved out of this building into a new one, we moved in the next day and began a training program for auto mechanics. I'm showing shots of this program because we don't yet have multi-media in our allied health occupations courses.

In toolcraft, which I am showing you, a student picks up a filmstrip, audio tape, and worksheet, and goes to a classroom area. Part of the class is working in study carrels and the others, in the classroom, and then they switch. This particular class happens to be an MTDA group where the students are selected completely from the welfare rolls. When we signed them up, a number of them hadn't been gainfully employed for three years and others hadn't ever held down a full-time job for more than a few days at a time. We worked with them for about 12 months, and had 60 percent placement from this group of 40 men.

In this type of class, the students going into the carrels may be told to take with them some three-dimensional object about which they will be taught. Here you see a young man with a carburetor that he will be taught to disassemble, or to identify certain elements, and so on.

A basic element of the multi-media system is the practice of having students and instructor engage in small group sessions. This frame shows the instructor conducting a demonstration with a small group, while the rest of the class is working in the carrels. When those in the carrels have completed their lesson they'll replace the demonstration group, which in turn will work in the carrels. This gives the instructor a chance to work with small groups and even with individuals. This demonstration is on the automatic transmission; the other students are working on related lessons.

Here is a picture of another shop building which we lease, off campus, and use for auto body and fender work and auto painting. For the lesson on welding, the tool crib attendant rolls up a welding cart, and the student is directed to go to that cart and check the gauges or the hoses or whatever part he is studying. This is interrelated with the multi-media instruction he is receiving, and his individual feedback is recorded on his worksheet.

Now we're looking at the room that B. Lamar Johnson described earlier. Here we have a typing or shorthand station involving a tape recorder, a typewriter, and sufficient work space. Each student is working independently on some portion of the three semesters of typing we offer--there are 210 basic tapes for this subject. Some students can complete the semester of work in half a semester--then they move right on to the work for the second semester. Others might complete only a helf a semester's work by the time the semester is over; instead of marking them "F", we give them an incomplete, and when they finally manage to meet the established performance goals for the semester, we give them credit, even though it may take them a whole year to complete a semester's work.

Because the students are working independently and the teacher is in the classroom throughout each session, there is plenty of time for her to help individual students with their problems.

This shows the value of video-tape in this particular class--the teacher is showing the student how the position of her hands on the keyboard is slowing her up, and demonstrating the proper position.

I've been in that classroom when there were 80 students at work, and only two of them were using the same tape. In other words, all but two of them were on different lessons. We schedule beginning, intermediate, and advanced typing in that room several times a day, because it doesn't matter how far along they are since they are working independently. For a small college, it gives us a lot better scheduling flexibility to schedule these three semesters at the same time several times a day. We do the same with shorthand.

Last year, when they were to deal with the question of credit hours, our Faculty Senate voted to grant credit on satisfactory completion of a certain number of hours except in those cases where defensible performance goals had been developed for courses; in such cases, credit would be granted on achievement of performance goals.

The first two subjects covered under this new directive were shorthand and typing; and the whole group is anxious to have other courses follow this pattern as soon as possible. It is not quite so easy with other courses, though.

One of the real problems we've encountered in having teachers work with small groups after the students have covered subject matter in individual study at the carrels is the tendency of teachers to lecture rather than to stimulate discussion. As we evaluate the problems of multi-media instruction, one of the real difficulties seems to find teachers who really can get students to talk about the materials they have learned and to synthesize this, and not to subject them to more lecturing.

So we got our teachers together and they put on some demonstrations among themselves, which were video-taped. We called this a workshop on small group discussion leadership techniques. Video-tapes helped show the teachers are prone to talk too much in these discussion sessions.

This frame shows a teacher and a supervisor discussing some newly developed performance goals. We recommend that after the teacher has prepared the performance goals, a supervisor or a fellow-teacher in the same field look them over and make appropriate suggestions before the package is put together.

I'm sure that in a program such as this Allied Health Project, you would want to submit the goals to a committee of experts who would approve them before multi-media materials were produced. We haven't discussed levels of instruction, but even before this point levels of instruction should be considered carefully and certain elements of the lesson identified by the levels to which they should be taught.

Many of our instructors dictate the initial version of a lesson, so most of them have tape recorders in their offices. We have the tapes typed off and reproduced for discussion and editing. Sometimes these are produced as dialogues, with the teacher speaking, and then asking a question of a student working on the project with him. The student's reply is recorded, and if necessary, discussed.

We also suggest that teachers work with students at other intermediate stages to make sure that tape, visuals, and worksheet are all perfectly comprehensible and logical to the student. This is a significant operation in the production of audio-visual materials. The teacher often discovers that the student doesn't understand what he had thought was perfectly obvious. So changes can be made when they cost least--during the planning stages of production.

This shot shows a teacher with the story-board he has prepared for the artist who will prepare the visual material. We all work on these. My kind of artist makes do with stick figures, but some of our teachers turn out sketches of almost professional quality.

We have a group of full-time artists and a group of part-time students who work putting the story boards into format so that the photographer can shoot them for the slides. For two years we have been using for our final photography a half-frame 35 mm single lens reflex camera that costs about $110. We have three of these, and they're working most of the time. Then, we bought a costly Swiss camera that was recommended as the best of all filmstrip cameras, and that one is back in Switzerland being repaired--so we're doing business as usual with our faithful $110 cameras.

Sometimes, to save time and money, we clip advertisements to use in illustrative material. Our copyright attorney tells us it's OK, though yours might not agree. But this just indicates some of the things you can do to save time and money; we attempt to make the most effective possible compromise between the best possible filmstrips and the ones we can afford.

We are producing filmstrips at an average rate of one or two a day. It takes a lot of support people to do this. Sometimes we carry a larger payroll than others, depending on the work load and the time of year. We have about half of our instructors on a 12-month contract, working during the summer months on production of multi-media materials.

We employ two sound technicians, and use this room 16 hours a day in two eight-hour shifts. The teachers record in a soundproof room near by, and the technicians' skills help improve the sound of the voices they record. Moreover, they can cut or splice to conform with the needs of the visual material; they add the musical backgrounds at the beginning of the tape; and when working on a tape for the typing or steno class the technician times it right to the second. The technicians also insert the cues on the tape that inform the student when to advance the filmstrip. Our filmstrips are not automatic. We believe it best to give the student a cue when he is to advance the filmstrip by actually turning the crank on the projector. For most of our filmstrips and tapes this cue is a high-frequency sound or beep.

We've hooked up 20 of our carrels to a master so that we can produce 20 copies at a time. The quality is not what we'd like, but it's within our budget. When we managed to get together $15,000 we bought a high speed, high quality tape copying setup which I can't show you because it is being installed this week. This will enable us to copy rapidly, with very high fidelity, and with very little loss from master to copy from now on.

Another detail of our operation of the multi-media system--we recommend that our instructors use a pre-test which a student can take to determine whether he really needs to take a given lesson, or can skip some part of it. Where appropriate, we recommend a post-test in addition to the worksheet. Not all of our programs have pre-tests or post-tests, nor are they appropriate for all programs. We also suggest that instructors build in suggestions for independent study toward the end of the filmstrip tape, so that the student who is anxious to advance is told how to do so; then the teachers try to remember to ask for reports or for discussion of the independent study materials in the small group sessions. In these sessions, students may volunteer information about work they have done in response to these suggestions.

As feedback between students and faculty develops, some evaluation forms are being prepared for each filmstrip tape. Some have special forms while others can use general forms, and these are gathered and used in evaluating the specific lesson. Sometimes a teacher will say, "I produced this lesson last summer and I thought it was pretty good, but now that we've used it for a semester I am anxious to replace it with something better; so let's try to get out a revision."

Although our focus in discussing multi-media has been on filmstrips and tape, we now have a workshop on campus for the production of 8 mm sound motion pictures utilizing this same system. We expect these to run from half to three-quarters of an hour in length, with a number of intervals when students are told to stop the projector and answer questions on the worksheet. In this case we told the students who worked on these films that what we thought would be the most economical way of producing these was to prepare the narration on an inexpensive portable tape recorder, and then carry this with them when they film the sequences, timing the sequence to fit the narration. Then they won't end up with an excess of film or of words.

We're limited in the amount of funds we have for this purpose and you have to use this kind of shortcut if you're going to use 8 mm motion pictures without wasting a lot of film. At the film workshop to which I referred, we prepared half-hour color sound motion picture, with about four hours of time with committees working on sequences for this. We ended up with an instructional film with a worksheet prepared with a pre-test and post-test, and the teachers got a pretty good idea of what was involved with production of this kind of media.

The equipment we used included a typical amateur camera, the portable tape recorder, and equipment for editing. And the teachers went back then to tape the final narration. That half-hour of film was made up of little sequences involving safety in relation to use of hand tools, which was the simplest subject we could pick to get subject matter that could be cut into bits for committees of teachers to develop in that short span of time.

During another workshop, we had brought in to us a computer terminal for computer assisted instruction. We believe that one of the best ways of helping teachers learn how to prepare programs for computer-assisted instruction is having them prepare these programs first for filmstrip tape and 8 mm motion pictures. Later, we believe, after they've acquired this type of skill and have practiced with it, they feel far more confident in working on programs for computer-assisted instruction.

We know it may be five or eight years before our college can actually have computer terminals for instructional purposes, but we're going to have a faculty that is well prepared with skills and know how to develop the program, and we'll get some idea of what it will cost to prepare the programs before we go into the project.

In closing, I'm going to show you a filmstrip tape prepared on campus for a required health education course. This is entitled, "Mental Illness," This is the worksheet the student would get. We'll not bother to discuss the content, but I want you to see a piece of audio-visual instructional material that can be used equally well by the student working individually in a carrel, or in a group session. [Dr. Johnson then showed the opening portion of the film.]

This was just a brief sample, and I think it illustrates the type of program we're developing and using. We now have these programs in 14 subject fields. I'll be glad to answer your questions about the program.

Unidentified questioner: What is the cost of this program?

Dr.Johnson: Well, that's like asking the cost of an automobile. It varies, I suppose, from $300 to $3,000 depending on how much photographic work, how much art work, how much outside talent and service, are required.

Questioner: No, I meant your total program.

Dr. Johnson: You mean how much is tied up in equipment? We couldn't identify it. It is far less than it would be if we had five computer stations, but. . .

Unidentified Questioner: Milo, what is the cost per ADA? I think that would be a better measure. How does this system compare with the cost per ADA under the old system? I think that's essentially what they're asking.

Dr. Johnson: I'm not trying to hedge, but obviously in the development of these programs we have worked with personnel of varying capacity. For example, our auto body and fender man, the only one we had available to work with, had not gone beyond high school. He had to have someone sitting by his side to prepare the scripts. We simply don't have the record; we don't know what it has cost us. Our Board of Trustees took the position when they studied the program--and we brought in about eight different consultants to Board meetings over a long period of time--they said, "We believe this is the way this college should go and if there is enough money, no matter what it costs, we're willing to go along and we're willing to stand the community pressure regardless of costs."

So we haven't kept cost records. It would have been impossible because we don't segregate the time the teacher spends working on multi-media or teaching to the time he spends doing something else on campus.

Questioner: Can you tell us what was the total cost per ADA for last year--this is a matter of public record.

Dr. Johnson: Yes, I can. Truly, our last year's cost was about $800 per student. It's about average for a college of our size.

Unidentified Questioner: That's what I'm saying. I think this is an indication for this group that using multi-media doesn't bankrupt the district.

Dr. Johnson: No, it doesn't. And we are working in a relatively poor district.

Questioner: The reason I asked was because I figured you probably had done a great deal with small resources and I was wondering just how small the resources were. For instance, how many technical people do you have working on this thing?

Dr. Johnson: Well, we have two artists, two sound technicians, and a half-time photographer working, and then we bring in other photographers as we need them, job by job, on and hourly basis. So this is the extent of our expenditures, really, plus student help at $1.55 an hour--maybe ten students who work 15 to 20 hours a week.

Questioner: I think that this is a problem that all of us have, and $800 indicates that a college can do a good job on this individualized instruction. In some cases you save, in some places you spend more, and so it tends to balance out. If this does a better job than the other system, it seems to me that it should go on. I thing $800 is a reasonable cost factor for a small college.

Unidentified questioner: Dr. Johnson, do you have any feelings or any statistics that lead you to believe that more students are getting more [from their work], that you are retaining more students? Is the dropout rate lower? And also, do you need the same number of teachers or is the student-teacher ratio approximately the same as it was before you began this program?

Dr. Johnson: The ratio is the same--we're average for the State for junior colleges our size. We are, of course, very anxious to have a continuing evaluation program and Mr. Bruce Monroe, a doctoral candidate in the UCLA School of Education, who is on our staff, has made quite an extensive evaluative study of the learning that took place here. The study indicated that our students were learning 11 percent more material for the same period of time--increasing teaching efficiency by 11 percent. I think the study was a good one--it is as good a one as we could possibly have designed.

Besides, he made a similar study of the multi-media system in other junior colleges, and he came out with an average of 10 to 11 percent increase in instructional efficiency. Now, this may not sound like a whole lot, but when you realize that there are many factors that you just cannot influence, no matter what you do, it leaves you only a small percentage that you do have a chance to influence--so this is a significant increase in teaching effectiveness.

Unidentified Questioner: What effect has this had on the climate for learning on the part of faculty and students?

Dr. Johnson: I think this is the really significant outcome as far as I am concerned. Those faculty members who weren't sold on this have left our institution. We didn't dismiss them, but they could see that recognition was going to the people who were producing well, and we weren't enough of a prestige institution for it to matter as far as that was concerned; so they just would rather go and teach elsewhere, and we welcomed this.

Now, we have a staff that's sold on multi-media, and the significant thing is what it does to a teacher. No teacher can prepare a multi-media lesson and be the same teacher again--it does something to their thought process in the preparation, when they have to think of a different visual every few seconds, when they have to think of a checkup question every three or four minutes, when they sit down with a clipboard and see a student going through a lesson and analyzing it, figuring what is the trouble with what they've just said and done--they simply cannot be the same teacher. They can't go back to being satisfied with the lecture method. Incidentally, the students also approve of the method.

Someone just asked how much change in instructional effectiveness is due to the process and how much to this enthusiasm on the part of the teachers and possibly the students.

Unidentified questioner: No, that's not quite what I asked. Is the fact that the teacher has to go through this process of preparing the filmstrip and tape perhaps a far better preparation for teaching that topic?

Dr. Johnson: There is no question about it. The best teacher takes maybe two weeks of his research and writing time to prepare the average filmstrip, text, worksheet, pre-test, post-test, lesson--and that's after he gets sort of skillful at this. There are some teachers who can do the job in a week, but we average out at about two weeks, and when a teacher first starts he is going to need three or four weeks with quite a little administrative help, and working with him every day or so. And when he gets skillful, it begins to fall in place more quickly.

Unidentified Questioner: Have you adapted this system to all types of courses? And to higher levels--so-called higher-level-type courses?

Dr. Johnson: Well, you probably mean such subjects as English and History. We have two semesters of American History taught with multi-media; we have English 1A (college) taught multi-media; Music Appreciation is just a natural for it.

The Chairman: Are foreign languages adaptable to this system?

Dr. Johnson: Yes. However, we are putting our money into those areas where you can't buy commercial material. Commercial tapes are available for foreign languages, and we have not produced our own where acceptable commercial tapes are available.

Unidentified Questioner: Did you pick filmstrip as your visual medium because of its economy as compared to, say, television, movies, cartridge loads, that type of thing?

Dr. Johnson: Yes. In fact, a salesman stopped in two days ago to try and sell us on the idea of going into 8 mm cartridge loading, and I told him, "Well, if we had gone this way in our tapes in shorthand and typing, we'd have paid you $166,000 for the cartridges, unloaded, that we have in that room. We have 8,280 tapes in that room that would have cost us $4 a tape--$166,000--so it just isn't practical for what we need. A cartridge for five minutes or maybe 15 minutes, for a program that is going to run half an hour--the logistics of the cartridge is something you just can't handle in our kind of operation.

Here we have moderate reproduction costs. The filmstrip of course can be stored in a little cylinder, and for our small junior college, where in the library we have thousands of filmstrips and tapes, storage becomes a real problem. When you have to get out the material for a hundred people in five minutes, and get it to the carrels, and then get it back, the smaller the object you handle the better it is. And we can produce filmstrips very inexpensively with a half-frame camera.

We didn't really have any money with which to get started--we had been defeated on three successive bond issues and we had no money to start at all. All the equipment you saw was loaned by the Security First National Bank, and still is, although we've just passed a bond issue to buy it from them; up to now we're leasing it.

So, having to overcome the problem that faced us with no capital funds, we went into the lowest priced operation that we could.

As far as the Allied Health project is concerned, it seems to me to be important to develop your media for use with a wide variety of equipment that institutions already have on hand. For example, I think it would be a mistake to develop your 8 mm sound motion pictures for use with one particular type of projector; but if you decide to go into filmstrip tape and 8 mm sound motion pictures, you'll do it with the fact in mind that people all over the United States have a wide variety of equipment, and you can select these media that will be adaptable to most equipment already on hand.

The Chairman: Any other questions:

I'd like to make a couple of brief comments before we adjourn. First of all, please make sure that all of the ballots with the explanatory essays have been turned in.

I'd like to say that from where I have sat today, it would appear that everybody felt free to express himself, and there are obviously some normal differences of opinion; if there weren't any, it would mean we were just being polite. But I do get the feeling that there is fundamental agreement on the urgency and importance of this project and that there is, as the saying goes, by far more that unites us than may divide us; I feel this is evidence that we are going to succeed.

I'd like to repeat that there should and will be correspondence soon, and one of the primary aspects of that correspondence should be to take you ladies and gentlemen up on your enthusiasm and become specific on how you might put some of your resources in support of this program as it unfolds. We hope you are as enthusiastic in the correspondence as you have been in the participation. Any further comment before we adjourn?

Dr. B. Lamar Johnson: I have a notion that the project staff will do this, but simply as a member of this group I would like to express my appreciation and admiration for the fine way our Chairman has conducted this session. I think we are all deeply indebted to you, Mr. Williams.

(Applause)

The Chairman: Thank you. The meeting is adjourned.

APPENDICES

Page

A. EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS -- Survey to Determine Priorities . 82

B. SURVEY OF EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS 86

C. PRIORITIES 97

D. STAFFING PATTERN 103

APPENDIX A

EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS

Survey to Determine Priorities for Development of Programs and Instructional Materials

1. Please rank six major areas in the order of their urgency of need for assistance in curriculum and instructional materials for educational programs up to and including junior college level. Do the same for each of the occupations in each of the major occupational areas.

2. Please add other occupational areas which you believe should be given priority for assistance. Make changes you believe are indicated in the major areas, or the occupations within the groups.

DETERMINING PROGRAM PRIORITY

( ) LABORATORY & X-RAY OCCUPATIONS

- ( ) Radiologic Technologist X-ray Technician
- ( ) Radiation Therapy Technician
- ( ) Medical Technologist
- ( ) Cytotechnologist
- ( ) Nuclear Medicine Technologist (Radioisotope Technician)
- ( ) Medical Laboratory Assistant
- ( ) Biomedical Engineering Technician
- ( ) Histologic Technician

DETERMINING PROGRAM PRIORITY CON'T

- ( ) NURSING OCCUPATIONS
    - ( ) Registered Nurse (professional)
    - ( ) Registered Nurse (technical)
    - ( ) Licensed Vocational (practical) Nurse
    - ( ) Operating Room & Obstetric Technician
    - ( ) Community/Home Health Aide
    - ( ) Psychiatric Aide
    - ( ) Nurse's Aides - Orderlies
    - ( ) Community Mental Health Technician

- ( ) THERAPIST AND REHABILITATION OCCUPATIONS
    - ( ) Physical Therapist
    - ( ) Physical Therapy Assistant
    - ( ) Occupational Therapist
    - ( ) Occupational Therapy Assistant
    - ( ) Orthotic Technician
    - ( ) Prosthetic Technician
    - ( ) Rehabilitation Counselor Assistant
    - ( ) Inhalation Therapy Technician - Respiratory Therapy Technician
    - ( ) Speech and Hearing Therapy Assistant

DETERMINING PROGRAM PRIORITY CON'T

- ( ) DENTAL OCCUPATIONS
    - ( ) Dental Assistant
    - ( ) Dental Laboratory Technicians
    - ( ) Dental Hygienist
- ( ) OPTOMETRIC OCCUPATIONS
    - ( ) Optometric Technician (Assistant)
    - ( ) Orthoptic Technician
    - ( ) Opthalmic Dispenser Optical Technician
- ( ) BUSINESS, CLERICAL, AND RECORDS OCCUPATIONS
    - ( ) Medical Records Technician
    - ( ) Medical Records Clerk
    - ( ) Medical Secretary
    - ( ) Medical Assistant
    - ( ) Ward Manager (unit manager)
    - ( ) Ward Secretary (ward clerk)
    - ( ) Pharmacy Assistant
    - ( ) Medical Illustrator (photographer)
    - ( ) Dietitician Aide
    - ( ) Food Service Technician
    - ( ) Environmental Health Technician

EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS
(Continued)

PROGRAMS IN OTHER OCCUPATIONAL AREAS

1.
2.
3.
4.
5.
6.

OTHER CHANGES

APPENDIX B: SURVEY OF EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS

LABORATORY & X-RAY OCCUPATIONS

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
1.	Radiologic Technologist X-Ray Technician	University Junior College Hospital	4 years 2 years 24 months	B.S. A.A. or A.S. Certificate

To be certified as a registered radiologic (x-ray) technologist (RT) by the American Society of Radiologic Technologists, the student must complete 24 months of training in an AMA approved school of Radiologic Technology.

2.	Radiation Therapy Technician	Hospital	1 year	Certificate

Assist in operating special x-ray equipment effective in treating certain types of cancer. Prepare radioactive materials used in diagnosis and treatment of cancer and other diseases. To be certified as a registered radiation therapy technologist, the student must be a radiologic technologist and take an additional year of study and work experience.

3.	Medical Technologist	College or University	3 or 4 years plus internship	B.S.

To be certified as a Registered Medical Technologist (MT) by the American Society of Clinical Pathologists (ASCP), the student must complete 3 years of college, plus 12 months in an AMA approved school of Medical Technology and pass the registry examination. Students may take pre-professional work in Junior Colleges.

4.	Medical Technician	Junior College	2 years	A.A. or A.S.

To be certified as a Medical Technologist by the American Medical Technologists (AMT), the student must be a graduate of a program accredited by this agency. At present, this certification is not recognized by some states, some hospitals, or the AMA.

SURVEY OF EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS CON'T

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
5.	Cytotechnologist	Junior College	2 years, plus internship	A.A./A.S.

Detect changes in body cells - particularly cancer.
To be certified as a Cytotechnologist (CT) by the ASCP, the student must have two years of college, plus twelve months of curriculum and apprenticeship in an AMA approved School of Cytotechnology, and pass the registry examination.

6.	Nuclear Medicine Technologist (Radioisotope Technician)	Hospital	1 year	Certificate

Work with radioactive isotopes being used to diagnose and treat cancer and other diseases.
To be certified as a Nuclear Medical Technologist (NMT), by the ASCP, the student must be a Medical Technologist (see number 3), and have twelve months curriculum and apprenticeship in an AMA approved clinical radioisotope laboratory, and pass the registry examination.

7.	Medical Laboratory Assistant	Hospital Junior College	1 year, plus summer 2 years	Certificate A.A./A.S.

Perform simpler diagnostic tests and procedures in laboratories.
To be certified as a Medical Laboratory Assistant (CLA), by the ASCP, the student must complete twelve months practical and technical training in an AMA approved program and pass the registry examination.

8.	Histologic Technician	Junior College	1 year	Certificate

Cut and stain tissues for microscopic examination.
To be certified as a Histologic Technician (HT), by the ASCP, the student must complete a 1-year training program in an AMA approved clinical pathology laboratory and pass the registry examination.

9.	Biomedical Engineering Technician	Junior College	2 years	A.A./A.S.

Operate, maintain, and repair the mechanical, electrical, and electronic equipment, and instruments

OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
9. Biomedical Engineering Technician Con't			

used in medical practice. (Electroencephalography, electrocardiography, cardiac defibrillators, pacemakers.)

Two national joint committees of the American Association of Junior Colleges, (one with the National Health Council, and one with the National Council on Medical Technology Education,) are currently developing further guidelines for training of medical laboratory personnel. Similar discussions are also being held which involve x-ray technology education. At the present time, most programs in junior colleges adhere to standards set by the AMA. However, some junior colleges have hired qualified faculty, undertaken curriculum studies, and on this basis, have instituted medical laboratory and x-ray programs similar to those described, but of shorter duration. They have not sought approval of these programs by the various AMA councils.

SURVEY OF EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS CON'T

<table>
<tr><th colspan="2">OCCUPATION</th><th>INSTITUTION OFFERING PROGRAM</th><th>LENGTH OF PROGRAM</th><th>CERTIFICATE OR DEGREE AWARDED</th></tr>
<tr><td colspan="5">NURSING OCCUPATIONS</td></tr>
<tr><td>1.</td><td>Registered Nurse (professional)</td><td>College or University</td><td>4 years</td><td>B.S.</td></tr>
<tr><td>2.</td><td>Registered Nurse (technical)</td><td>Junior College
Hospital</td><td>2 years
2-3 years</td><td>A.A./A.S.
Diploma</td></tr>
<tr><td></td><td colspan="4">Both professional and technical programs in nursing prepare students as beginning practitioners in nursing. The Associate Degree and Diploma programs emphasize bedside nursing - direct patient care. In addition to hospital staff nursing, graduates of baccalaureate programs are prepared to assume public health nursing assignments, and have the foundation for graduate study.</td></tr>
<tr><td>3.</td><td>Licensed Vocational (Practical) Nurse</td><td>Junior College
Hospital</td><td>1 year
1 year</td><td>Certificate
Certificate</td></tr>
<tr><td>4.</td><td>Operating Room & Obstetric Technician</td><td>Junior College</td><td>1 year</td><td>Certificate</td></tr>
<tr><td></td><td colspan="4">Function as "scrub" and "circulating" assistants in caring for patients during surgery, labor, and delivery.</td></tr>
<tr><td>5.</td><td>Community/ Home Health Aide</td><td>Junior College</td><td>1 year</td><td>Certificate</td></tr>
<tr><td></td><td colspan="4">Work with public health nurses to enlarge effectiveness of visiting nurse services, and home care programs.</td></tr>
<tr><td>6.</td><td>Psychiatric Aide</td><td>Junior College
Hospital</td><td>1 year
On-job training
6 months - 1 year</td><td>Certificate</td></tr>
</table>

SURVEY OF EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS CON'T

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
	NURSING OCCUPATIONS CON'T			
7.	Nurse's Aides Orderlies	Junior College Hospital	1 year On-job training (length varies)	Certificate
8.	Community Mental Health Technician	Junior College	2 years	A.A./ A.S.

Work under qualified professional in hospitals, clinics, out-patient departments, schools, other institutions and agencies caring for the mentally ill, mentally retarded, and in promoting mental health.

EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS CON'T

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
		THERAPIST AND REHABILITATION OCCUPATIONS		
1.	Physical Therapist	College or University	4 years	B.S.
2.	Physical Therapy Assistant	Junior College	2 years	A.A./A.S.
	Function under the supervision of a registered physical therapist.			
3.	Occupational Therapist	College or University	4 years	B.S.
4.	Occupational Therapy Assistant	Junior College	2 years	A.A./A.S.
	Function under the supervision of a registered occupational therapist.			
5.	Orthotic Technician	Junior College	2 years	A.A./A.S.
	Make and fit braces, supports, and other orthopedic appliances.			
6.	Prosthetic Technician	Junior College	2 years	A.A./A.S.
	Make artificial limbs and adjusts them to fit amputee.			
7.	Rehabilitation Counselor Assistant	Junior College	2 years	A.A./A.S.
	Perform duties related to workshops, vocational evaluation, training, placement activities in rehabilitation. Function under the supervision of professional rehabilitation counselor.			

SURVEY OF EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS CON'T

THERAPIST AND REHABILITATION OCCUPATIONS CON'T

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OF DEGREE AWARDED
8.	Inhalation Therapy Technician - Respiratory Therapy Technician	Junior College	2 years	A.A./A.S.

Use and maintain equipment associated with inhalation therapy; the therapeutic application of medical gases. (Program for this technician could also be included in the Medical Laboratory and X-ray, or Nursing Occupations.)

9.	Speech and Hearing Therapy Assistant	Junior College	2 years	A.A./A.S.

Perform specific procedures and tasks under supervision of professional speech and hearing therapists.

SURVEY OF EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS CON'T

OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
DENTAL OCCUPATIONS			
1. Dental Assistant	Junior College	1-2 years	Certificate or A.A./A.S.
Prepare patients for examinations and treatments; takes x-rays; mixes fillings and impressions; set up trays, and performs clerical tasks.			
2. Dental Laboratory Technicians	Junior College	2 years	A.A./A.S.
Make plastic or ceramic teeth and crowns; prepare corrective appliances; cast gold inlays, crowns; metal framework for dentures and bridges.			
3. Dental Hygienist	College or University Junior College	4 years 2 years	B.S. A.A./A.S.
Perform prophylactic procedures; take and develop x-rays; give advice on diet and nutrition; teach toothbrush techniques.			

SURVEY OF EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS CON'T

OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
OPTOMETRIC OCCUPATIONS			
1. Optometric Technician (Assistant)	Junior College	2 years	A.A./A.S.
Assist opthalmologist or optometrist in examining refracting, prescribing lenses, maintaining office.			
2. Orthoptic Technician	Junior College	2 years	A.A./A.S.
Assist individuals to overcome handicap of crossed eyes. Usually functions as an assistant to the opthalmologist.			
3. Opthalmic Dispenser Optical Technician	Junior College	2 years	A.A./A.S.
Interpret prescriptions; grind , fit, and adjust lenses.			

SURVEY OF EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS CON'T

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
	BUSINESS, CLERICAL, AND RECORDS OCCUPATIONS			
1.	Medical Records Technician	Junior College	2 years	A.A./A.S.
	Assist Medical Record Librarian in reviewing and maintaining records, compiling statistics, tabulating data, transcribing reports, and other activities in supervision of routine operations.			
2.	Medical Records Clerk	Hospital Junior College	On-job training 1 year	---- Certificate
	Perform routine tasks of maintaining medical records, checking charts, preparing reports.			
3.	Medical Secretary	Junior College	1-2 years	A.A./A.S. or Certificate
	Maintain business and paperwork of medical office, public health facility, laboratory, or insurance company.			
4.	Medical Assistant	Junior College	1-2 years	A.A./A.S. or Certificate
	Assist in performing certain nurse and laboratory functions in physician's office. May also perform some clerical duties.			
5.	Ward Manager (unit manager)	Junior College	2 years	A.A./A.S.
	Assume managerial functions on nursing units, nursing homes, etc., to extend services of nursing personnel.			

SURVEY OF EDUCATIONAL PROGRAMS IN THE ALLIED HEALTH OCCUPATIONS CON'T

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED

BUSINESS, CLERICAL, AND RECORDS OCCUPATIONS CON'T

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
6.	Ward Secretary (Ward Clerk)	Hospital Junior College	On-job training 1 semester	---- Certificate
7.	Pharmacy Assistant	Hospital Junior College	On-job training 1 year	---- Certificate

Assist professional pharmacist in handling clerical, administrative functions, and routine tasks related to pharmacy routines.

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
8.	Medical Illustrator (photographer)	Junior College	2 years	A.A./A.S.
9.	Dietitician Aide	Hospitals Junior College	On-job training 1 semester - or less	---- Certificate

Assist in preparation and serving of meals.

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
10.	Food Service Technician	Junior College	2 years	A.A./A.S.

Assist in preparation and serving meals; planning of budget; purchasing food, equipment and supplies; handling of personnel matters.

	OCCUPATION	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	CERTIFICATE OR DEGREE AWARDED
11.	Environmental Health Technician	Junior College	2 years	A.A./A.S.

Assist professional personnel in maintaining safety and control of water; food industry and supply; and sewage disposal.

MEJ:fm

APPENDIX C. PRIORITIES

This is a review of the results of the survey to determine priorities for development of programs and instructional materials in the Allied Health Professions completed by the National Advisory Committee at the September 13, 1968 meeting.

In general, the Committee members did not feel that they were qualified to assign priorities to occupations. Comments were submitted to this effect by many, and 12 of the 22 members present failed to rank the occupations.

The Survey of Health Occupations given the Committee was divided into six major groups. (See Appendix A.) In order to analyze the results of the survey, points were allotted to each ranking. First rank was given six points, second rank was given five point, and so forth. The total number of points was established for each major field. Using this system, Laboratory and X-ray fields obtained first priority with 49 points; Nursing, second priority with 44 points; Dental, third priority with 37 points; Therapies, fourth; Business and Management, fifth; and Ophthalmologic/Optometric, sixth

Within each of these major groups, rankings were even less reliable. Under Laboratory and X-ray, perhaps the most important to the Committee were the Medical Laboratory Assistant and Technician and Radiologic Technician. In this general area, EEG, EKG, and EMG Technicians were added later as a result of a suggestion by Dr. John Affeldt, Medical Director of the Los Angeles County Hospitals. He indicated that the importance of these technicians' programs lay not so much in terms of the numbers of people involved, as in the newness of the fields and the need for curricula and instructional materials.

In the nursing fields, there was quite a bit of spread in ranking, with few clues given as to priorities. A National Advisory Committee member from the ANA suggested that the Community Mental Health technician possibly did not belong with the other nursing fields. This, and the Community Health Aide, will be included in a separate group under the heading of Social Service and Community Workers.

Within-group rankings for the other areas in the Survey were given by very few people. Most members of the Advisory Committee stated they could provide ranking only for the fields in which they were qualified.

It is clear from the comments of the Advisory Committee (attached), that to some extent it will be up to the staff of the project to determine priorities. Priorities will be determined, therefore, in terms of the need for personnel, and need for assistance with educational programs, as well as readiness to participate on the part of the major interested groups involved.

Some priorities will be established on the basis of ferment within the field and the need for examination and possible changes in the field as a whole. The Clinical Laboratories are an example of this type of priority setting. Personnel in the Clinical Laboratory field are concerned and are examining their own field. The staff of this project may be able to assist in the clearer definition of personnel needs and functions, and once functions have been defined, to help in developing curricula and instructional materials.

As we talk to people in the field, new occupations continually arise. It is our hope that, with the talented staff we have recruited, new ideas and occupations will continue to emerge. Priorities cannot be set beyond the first year's planning, since during that first year we expect to find new occupations as well as a new understanding of the needs of the health care field.

1. REMARKS INSERTED UNDER "OTHER CHANGES"

Miss G. DeChow

I'm not sure that the Community Mental Health Technician should be included under nursing. Has it been determined that nursing is the discipline under which it belongs? Does this need to be determined?

Is the Nurses' Aide program one year in length as indicated in survey? Should it be? Is it part of the Junior College? Should it be?

Dr. Paul E. Klopsteg

I am unable to persuade myself that I or, perhaps, any other member of the Advisory Committee can make significant choices among the 43 items listed, to identify those which require first attention. How can we possibly know enough about all the fields to be fully objective in expressing choices?

Those which I have marked seem to me important; but, relative to others, how important?

Dr. Dale Lindsay

The hoped-for answers to these questions are exactly what UCD is needful of in order to define its role. When you have come up with such a listing we will find it most interesting.

I do not have the knowledge needed to make the evaluation at this point.

Dr. R. L. Matkin

At the present time there are 123 Dental Assisting programs, 62 Dental Hygiene programs and 17 Dental Laboratory programs that have been approved by the Council on Dental Education.

The State Department of Education of California has recently completed a comprehensive curriculum study for Dental Assisting programs. Therefore Dental Assisting appears to be most widely available and progress has been made in the direction of curriculum.

Dental Laboratory Technology is an area that is just becoming an area of interest for the community colleges.

Dental Hygiene is somewhat restricted primarily due to individual state licensing restrictions, and may require some preliminary investigation before proceeding. Perhaps demonstrations of what can be done in Dental Assisting and Dental Laboratory Technology will convince the stereotyped and restricted Dental Hygiene programs of the need for updating

Mr. C. L. Lindley

I don't think it is possible to rank program or area priority -- all fields are important, and shortages exist nationwide.

I would hope the project would include some of the new emerging health occupations for which there is as yet no clearly defined curricula. Many of these are now in the "on-the-job" training area.

We should not provide training at a higher level than is necessary to perform job tasks.

Don't include occupations for which there already exist well-developed curricula.

Dr. J. Warren Perry

I hope to work closely with this project -- it has great merit and potential for the allied health professions.

I would hope that at an appropriate time that State University of New York might be used for assistance in the implementation of this project. My greatest concern is the lack of administrative and coordinative relationships of the community colleges here in California with major undergraduate and degree programs in the California system. There is an obvious lack of recognition of the allied health professions in the university setting, and inadequate leadership can be expected from these degree programs. So you must rely heavily on advisory groups for each allied health profession from outside the California system. But I see this project staff as a major force in strengthening of the allied health A/A programs -- and we can all use the exciting innovations I expect to see result from this project.

Dr. J. A. Gallagher

My general reaction in listing priorities in previous sheets leaves one extremely important area mentioned only in one instance -- that of Environmental Health Technician. While I am in no way indicating that health manpower needs for episodic illness are not of extreme importance, I wish to impress upon those who will refer to this document the equal requirement of manpower in the environmental health field. I would urge that manpower to improve our environment-air-water-food-accidents, etc., etc., be emphasized as well.

I think it erroneous to take a national poll from the Committee on national health manpower needs as we individually and/or collectively see them. As was expressed in the discussion on the point, many felt inadequate as to need either nationally or locally in California. Others undoubtedly will emphasize the great national and local need for their particular disciplines. My hope is that this study will, among other things, develop a technique that can be used for disciplines as they become identified locally throughout the nation.

2. REMARKS INSERTED UNDER "DETERMINING PROGRAM PRIORITY"

Many listed remarks stating that they did not feel qualified to evaluate priorities; however, other pertinent remarks were as follows: (When names were written on the sheet, those names follow the remark.)

Main comment - be sure to examine functions as well as structures; may need entirely new and different structures. R. W. Gerard.

Under Laboratory & X-Ray Occupations -- Radiologic Technologist-X-Ray Technician. There is a continuing demand -- but we hear(have not verified source-reliability yet) that 70-80% of these techs. leave the field within 18 months after they begin work. We do not know (factually) why . . . .Under Nursing Occupations - Psychiatric Aide -- great need in California for good training outside the Department of Mental

Hygiene . . . . Under Nursing Occupations - orderlies -- rarely get good, systematic training . . . . Under Business, Clerical and Records Occupations - Medical Assistant -- these jobs currently run the gamut of skills and responsibility -- just delineating and designating the significant tasks would be a great help; the Project's subsequent curriculum and training methods would be an outstanding contribution. Ann Lewis

Rate myself as incompetent to offer ratings of priority since I effectively represent only one major area in the occupations listed. Nevertheless, I urge serious consideration of the Prosthetics-Orthotics Technician group by the project, based on the critical need for this group of specialists. Systemized training now taking place throughout the world. A. Staros

Under Therapist and Rehabilitation Occupations - Speech and Hearing Therapy Assistant -- Highly important for assisting those with partial hearing loss. Paul E. Klopsteg

I am afraid I must rate myself as not qualified to make rankings of major areas. However, I must express my dissatisfaction with the definition of the Prosthetic-Orthotic Technicians. In this context the Prosthetist-Orthotist has been defined in the survey, "The Prosthetist-Orthotist technician works under the supervision of the Prosthetist-Orthotist." J. E. Traub

Under Optometric Occupations -- This is the only area in which I feel I have any expertise. There is a move to develop a single program for technicians to serve both Ophthalmologists and Optometrists. I am not sure this single technician (optometric, ophthalmologic, ophthalmic, ocular, vision or eye care, etc., are names suggested at one time or another) will work but it would be a fascinating challenge. The Optometric Technician is by far the most important in this group. H. Peters.

Being a generalist in this field, I do not feel I have the expertise to make a knowledgeable selection -- one that would be meaningful for the staff -- all my selection would give is a "notion" as I make a selection. . . . I would be more productive if opportunity could be given to apply criteria which apply to the areas (?) of the grant . . . . It appears to me a more meaningful selection could be made by experts in each occupational family -- then using the criteria with back-up material, the Advisory Committee could make selections based on their judgment. L. Mendel

Under Nursing Occupations - Psychiatric Aide -- an increasing need . . . . Under Optometric Occupations - Don't know need in this area . . . . Under Business, Clerical, Records Occupations - Ward Sec. (ward clerk)Neglected. Lindley

Under Laboratory & X-Ray Occupations - Medical Technologist -- excellent programs in operation. . . . Under Laboratory & X-ray Occupations - Cytotechnologist -- good programs in operation. . . . Under Therapist and Rehabilitation Occupations - Occupational Therapy Assistant -- good programs in operation. Orthotic Technician & Prosthetic Technician -- Miles Anderson knows these programs at A/A level well. J. Warren Perry.

Under Laboratory & X-ray Occupations - Radiation Therapy Technician -- Beyond Junior College; 3-4 years. Medical Technologist -- beyond Junior College; 3-4 years.

Under Nursing Occupations - Registered Nurse (professional) -- not pertinent; 4-year program.

The same comment is listed for Physical Therapist and Physical Therapy Assistant.

Under Business, Clerical, and Records Occupations: Generally rank after all above. . . . Medical Assistant -- poorly placed under Business, Clerical and Records. . . . Ward Manager (unit manager) -- can relate with Practical Nurse or Nurses' Aides, as in military, and with Ward Clerk. J. A. Wier.

APPENDIX D. STAFFING PATTERN

The major groups of occupations have been redesigned in terms of the priorities we have now set and in terms of the personnel available to us. We should like to report the following grouping of occupations and indicate the staff members responsible for each group.

We have found that the highest caliber of personnel interviewed, for the most part, were doctoral students at USC and UCLA. For this reason, we have made quite a few part-time assignments, permitting these students to continue their studies.

Assignments are summarized in a table which follows; details of staffing are given below:

> Miss Mary Jensen will be Associate Director in charge of the nursing occupations, which include the RN, LVN, Operating Room and Obstetric Technicians, Nurses' Aides, and Psychiatric Aides. She has a master's degree in Nursing Education from Teacher's College, Columbia, and has been a director of nursing education at a junior college and chairman of a division of health related occupations, also in a community college. She is a doctoral student in the field of higher education in the UCLA School of Education.
>
> Laboratory and X-ray groupings have been divided. Clinical Laboratories will be handled by Mr. Martin Ross. Mr. Ross is a doctoral student in Medical Care Administration in the School of Public Health, UCLA, and has had experience as a Laboratory Technician. The Clinical Laboratory field will include not only the Medical Technician and the Medical Laboratory Assistant, but also the Cytologic Technician, Histologic Technician and any other new categories of personnel which may be developing in this field.
>
> Mr. Richard McCartney will handle X-ray, Inhalation and related fields. Mr. McCartney is a doctoral student in the field of Medical Care Administration in the School of Public Health, University of California. He holds a general secondary teaching credential, teaches Industrial Arts at Los Angeles State College, and currently is a consultant in hospital administration at Hollywood Presbyterial Hospital.

Mr. Thomas Freeland will be responsible for developing programs for the EEG, EKG, and EMG Technicians. He is a doctoral candidate in Physical Education at USC and has special interests in medical instrumentation, bioelectric measurement and the physiology of exercise.

The Housekeeping and Business section will be handled by Mr. Robert Henrich, who has an M.S. in Hospital Administration and has been a hospital administrator both in the Air Force and with the Kaiser Foundation Hospitals. Mr. Henrich is interested not only in the housekeeping and business aspects of the hospitals, but also in the supervisoral duties of the head personnel in each of these sections.

Mrs. Dolores Tartar will begin to work with the Medical Records Technicians and the Medical Assistant groups. She has a general secondary teaching credential and a master's degree in higher education, and was a secretary herself while working her way through college. She has been indirectly allied with the medical fields since her husband is a biostatistician. She has been associated for a number of years with the School of Public Health through her husband.

The Therapy group (Physical Therapist, Occupational Therapist, and Orthotic and Prosthetic Technicians) has been placed in the capable hands of Mrs. Patricia Thouin, a doctoral student in the Department of Health and Physical Education at the University of Southern California. Mrs. Thouin's experience includes work with the Los Angeles County Health Department, and teaching. In her doctoral studies, she has worked in medical care administration as well as health education. It was felt that for this group, a generalist who understood the field and who could communicate with people in the field would be more effective.

The Dental groups, it is hoped, will be handled by a dentist being recruited at the present time by the School of Dentistry. He will hold an appointment in the School of Dentistry, as well as in the Division of Vocational Education, will be paid by our project, and will have full responsibility for development of the allied dental personnel.

Activities related to the Ophthalmology/ Optometry group, for the present time, will be deferred since there is currently work going on in Washington to determine whether Ophthalmology/Optometry require similar kinds of assistants and how Ophthalmologists and Optometrists can work together. For the present time, specialists from the fields of Ophthalmology/Optometry will be brought in as consultants to this group.

A new group of occupations has been established under the heading of Social and Community Services. This group will include the Community Health Aide, the Social Worker Aide, and other entry level positions as well as the Community Mental Health Technician. We have become aware of, and interested in, the career-ladder concept in personnel development and will be exploring this in all areas, but with specific reference to this group. Currently, there are several people with considerable experience in these fields available to us as consultants.

STAFFING PATTERN, FALL 1968

ALLIED HEALTH PROFESSIONS PROJECT

			Time	
Associate Director	Background	Field/Occupation	Full	Part
Mary Jensen	Nursing Education Administration	Nursing Occupations RN LVN OR/OB Tech. Nursing Aide Orderly		X
Martin Ross	Hospital Admin. Medical Care Admin. Laboratory Technician	Clinical Laboratories Lab. Tech. & Ass't Cytotechnologist Tissue Tech.		X
Dick McCartney	Medical Care Admin. Industrial Arts Educ.	X-Ray Radiation Therapy Inhalation Therapy Cardiopulmonary Technician		X
Tom Freeland	Physical Education Physiology of Exercise Medical Instrumentation	EEG EKG EMG		X
Bob Henrich	Hospital Admin.	Housekeeping, Business Laundry Business Office Ward Clerk Ward Manager Environmental Health Dietary Pharmacy	X	

Associate Director	Background	Field/Occupation	Time Full	Time Part
Dolores Tarter	Higher Education Secretarial	Medical Records Medical Secretary Medical Assistant		X
Pat Thouin	Health Education Health Administration	Therapy and Rehab. OT PT Orthotics Prosthetics Rehabilitation	X	
To be selected		Dental		
To be selected		Community Health Community Mental Health Social Work		
To be assigned		Ophthamology/Optometry		